The Croonian Lectures

ON

A NEW DEPARTURE IN CONNEXION WITH DIABETES.

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BY F. W. PAVY, M.D., LL.D., F.R.S.,

CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

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LECTURE II.

CARBOHYDRATE CAN BE WITHDRAWN FROM THE PROTEID MOLECULE.

MR. PRESIDENT, COLLEAGUES, AND GENTLEMEN, — Not only can we say that proteid is formed from a carbohydrate in the manner that I have mentioned, but a little time ago my investigations led me to recognise that carbohydrate can be withdrawn from the proteid molecule. It was some time before I realised the exact position I was thrown into. While extracting glycogen I found that I could not satisfactorily account for the amount of material which I got under certain circumstances. Following these investigations, I was led to conclude that the only source for the extra material must be the proteid matter present in what I was operating upon. The first experiments were conducted with potash, for estimating what I took to be glycogen in white of egg. The sugar had been extracted by spirit, and the coagulum was afterwards treated with potash and dissolved. The solution thus obtained was then poured into spirit, and I got the precipitate which yielded me subsequently a substance—the primary potash product—which, when treated with sulphuric acid, yielded sugar. The sugary-looking extract upon this glass, as you may perceive, has a strong baked-sugar smell and gives the various indications of consisting of sugar. The copper test is capable, with proper care, of being applied. All difficulties have been overcome with the attention which has been given to the matter. On account of the presence of nitrogenous matter (peptones) there was at first a difficulty in getting a neat and clean reaction with the copper test. A principle is now known which combines with sugar and forms a crystallisable compound. It has only been discovered recently, and we are indebted to Emil Fischer for most brilliant results obtained by operating with phenyl hydrazine. With this liquid, when kept over a water bath, sugar forms a crystallisable compound called osazone. The sugar from my potash product, like other sugars, produces crystals, presenting characteristic appearances when examined by the microscope. The crystals I will show you have been obtained from albumen product—from sugar derived from egg albumen. The primary product obtained by the action of potash is an amylose. The amylose, or primary, product is convertible into sugar, like other amyloses, by boiling with sulphuric acid; so that, first of all, sugar is produced by means of the action of sulphuric acid, and then from the sugar an osazone, or a combination between phenyl hydrazine and sugar, is obtained which presents itself under the form of characteristic crystals.

TRANSMUTATION A PROCESS OF SYNTHESIS AND SPLITTING UP AS WELL AS DEHYDRATION AND HYDRATION.

I have spoken of the transmutation of carbohydrate matter in the directions of hydration and dehydration, but something more than this takes place. If I refer to the sketch, which I have drawn from a book of my colleague and friend, Sir William Roberts, representing the breaking down of the starch molecule into dextrine and maltose, it is seen that we begin in reality first with a complex molecule—a far more complex one than is actually represented in the sketch. It is computed that the molecular weight of starch in the gelatinous state is no less than from 20,000 to 30,000, as compared with the molecular weight of maltose, 342, and glucose, 180. No wonder, if we have such large molecules as starch consists of, that it fails to pass through the pores of a filter in the same way as a saccharine solution will do. Now, in the dehydration of sugar into starch which occurs in the vegetable kingdom there is not only the act of dehydration, but at the same time a synthesis, or aggregation of molecules. Molecules become united together so as to form one of large dimensions. In the opposite process, that of hydration, a splitting up into smaller molecules at the same time occurs.

THE GLUCOSIDE CONSTITUTION OF PROTEID MATTER.

Proteid matter is split up by ferments and by chemical agents. This we shall see. It is synthesised—or the principles entering into its constitution are synthesised, by means of protoplasmic action. I have already given an illustration, from the cell of the yeast, of how proteid matter is formed from a carbohydrate and a nitrogen-containing compound. There are a number of bodies known belonging to the group of glucosides. Salicin is a glucoside containing only the three elements carbon, hydrogen, and oxygen. Amygdalin is a glucoside containing the additional element, nitrogen. Myronic acid, which is obtained from black pepper, is a glucoside containing the additional element, sulphur. Then we come to mucin, a complex nitrogenous compound distributed largely throughout the animal system. It exists in connexion with epithelial structures and also forms the ground—the basis, as it were, the main chemical constituent—of connective tissue.

Mucin thus existing largely in the animal body has been shown by Landwehr, during the last ten years, to constitute a glucoside. In Landwehr's procedure there is, first of all, a body obtained of an amylose nature, convertible into a body of saccharine nature by treatment with sulphuric acid. The amylose he has called "animal gum." The other, which is derivable from his animal gum by treatment with sulphuric acid—just as starch is convertible into sugar by sulphuric acid—he has called gummose. It was not from any assistance from Landwehr's discovery that I obtained a knowledge of the glucoside constitution of proteid matter. It was entirely evolved in the course of investigations which were being carried on in these laboratories. And if there is any credit to be attached to the discovery a great deal of the credit belongs to the laboratories which have been provided for research work by the Royal Colleges of Physicians of London and of Surgeons of England, because I am sure that if it had not been for the assistance afforded by these laboratories the discovery would never have been made so far as I am concerned. I have no doubt that in the course of time it would have been made, but I should not have been in a position to expound to you what I am able to do at the present time. The discovery was made in the course of an investigation with regard to glycogen. Glycogen and starch, it is found, are not destroyed by boiling with potash. Sugar is, but the amyloses are not. To get the glycogen isolated I boiled the product, whether liver, muscle, spleen, kidney, brain, lung, or anything else, with potash and made a solution of it, which can readily be done in the course of a short time. The solution was then poured into spirit and the glycogen precipitated. Now in the course of these investigations I found that upon keeping the product in contact with potash for a longer time than usual I got what appeared to me an increased amount of glycogen. Again, upon using a more concentrated solution of potash than I was generally in the habit of doing I likewise got what appeared to be an increased quantity of glycogen. Now this could not happen simply from free glycogen, because all that potash does is to dissolve the substance and to put the glycogen into a position for being precipitated by spirit to be separated from the other constituents of the material operated on. This led me to feel that there was something that I was not yet acquainted with. Then, strange enough, I got larger quantities upon using stronger solutions of sulphuric acid. The material precipitated by spirit, in the process adopted, is dissolved and then heated with sulphuric acid to convert it into sugar, and afterwards the amount of glycogen is estimated by the amount of sugar. I found that by using stronger sulphuric acid I could get again an increased amount of material—or what appeared to be an increased amount of material. This was for a long time exceedingly perplexing. I did not understand at all how it was that this increase occurred from both potash and sulphuric acid. Now it is intelligible enough. The increased quantity obtained from the increased strength of potash is on account of the larger amount of liberated carbohydrate matter from the proteid. The larger amount apparently obtained after sulphuric acid is due to the more concentrated sulphuric acid carrying the material further as regards cupric oxide reducing

power than before. This is only the appearance of an increase; there is no real increase of material. For instance, you take a certain quantity of maltose—the cupric oxide reducing power is 61, as compared with glucose at 100. Now if you have maltose and not glucose to deal with you only get, say, a cupric oxide reducing power equivalent to 61; but if you convert the maltose into glucose you get immediately a cupric oxide reducing power equivalent to 100. It gives you the appearance of having more material. The matter thus became perfectly cleared up by what I learned afterwards.

THE ACTION OF PHENYL HYDRAZINE.

When proteid matter is treated with potash the first product obtained is comparable to Landwehr's "animal gum." As far as I can see it exactly agrees with it. It does not form an osazone with phenyl hydrazine; it does not reduce the copper solution. In fact, it does not possess any of the ordinary properties of sugar; it corresponds with the amylose carbohydrates. On treating this product with sulphuric acid it is converted into a sugary extract—a substance not only presenting the appearance of a sugary extract, but possessing a baked sugar smell, and giving the different reactions I will mention of sugar: it is darkened by potash; it reacts well with Fehling's solution; it gives a precipitate with benzoyl chloride; it yields the characteristic colouration with α-naphthol and with thymol, and is susceptible of precipitation by lead. Sugar forms a compound with lead, and my sugar, when treated in the proper way, can be thrown down in combination with lead and may afterwards be recovered and produce the different reactions belonging to sugar. We obtain the greatest assistance from phenyl hydrazine. The reaction of this agent with sugars, discovered by Emil Fischer, has been used for differentiating the various sugars. There are different crystalline forms produced by the different kinds of sugar. The crystals, for instance, of maltose with phenyl hydrazine present different characters from those of glucose with phenyl hydrazine. Again, lactose gives crystals distinct from others. Further, the melting point of the crystals varies, and so does their solubility in water and in alcohol. From these points, therefore—the crystalline form, the melting point, the solubility in water and alcohol—we obtain information showing that the phenyl hydrazine can be turned to good account for differentiating the various sugars.

Phenyl hydrazine constitutes a liquid derivative from benzene and the reaction occurring is that one molecule of the carbohydrate combines with one molecule of the phenyl hydrazine to form a soluble compound called a "hydrazone." In the presence of an excess of phenyl hydrazine the hydrazone so formed takes another molecule of phenyl hydrazine and becomes converted into a crystalline product known as an "osazone." Now, the osazone when formed may be acted upon in such a way as to permit of the recovery of the sugar from it.

CLEAVAGE OF SUGAR FROM THE PROTEID MOLECULE BY THE DIRECT ACTION OF SULPHURIC ACID.

Having found that carbohydrate convertible into sugar by sulphuric acid was to be obtained from proteid matter by means of potash, I thought we ought to be able to obtain it by sulphuric acid employed direct. Glucosides are split up by acids, alkalies, and ferments, and therefore I thought, if investigations were pushed, that we ought to be able to obtain the sugar by the direct employment of sulphuric acid. And this has proved to be the case. The proteid molecule seems to resist to a considerable extent being split up. It is not a glucoside like salicin and others that readily yield their carbohydrate under subjection to the influence of chemical agents. It is exceedingly resistant, and we are obliged to use strong agents to be able to obtain it. First of all I used a 2 per cent. strength sulphuric acid, then 10 per cent., and by means of the 10 per cent. sulphuric acid there is not the slightest difficulty in splitting up the proteid molecule and getting the carbohydrate liberated in the form of sugar. You see there is this difference when potash is used: the carbohydrate is liberated in the form of an amylose. Sugar could not exist in contact with the boiling potash. You get carbohydrate then in the amylose form, whereas when the proteid matter under these circumstances is treated with sulphuric acid you get it in the form of sugar.

On treating the proteid with 10 per cent. sulphuric acid sugar becomes liberated, and is readily recognisable by means of the phenyl hydrazine test. The copper test does not answer satisfactorily here—in fact, if the copper test had answered I am quite sure that the glucoside constitution of proteid matter would have been long ago recognised by investigators. The effect of the copper test is concealed by means of the peptone. You not only get carbohydrate liberated, but likewise peptone, and this gives, from its biuret reaction, colour with Fehling's solution. Further, in the boiling, ammonia is liberated, which interferes with the deposition of the suboxide of copper. Now that it has been made recognisable that there is sugar, you can see through the obscurity, as it were, and perceive that a reaction with the copper test in reality occurs. In contradistinction, no difficulty whatever exists with regard to the phenyl hydrazine test. When the product is treated with phenyl hydrazine the osazone crystals fall in a shower-like manner, and may be readily collected, and afterwards the sugar may be recovered from them.

CLEAVAGE OF SUGAR FROM PROTEID BY FERMENT ACTION.

Further, by ferment action carbohydrate is susceptible of being liberated from the proteid molecule, and this occurs in the process of digestion. I took some pure albumen obtained from the white of egg and submitted it to artificial digestion, and as a result carbohydrate was obtained which gave osazone crystals with phenyl hydrazine. These I will by-and-bye show you with the lantern slides. It is by means of ferment action that proteids are split up in the alimentary canal into simple principles consisting mainly of peptone and carbohydrate. These simple principles, lying within the sphere of influence of the protoplasm belonging to the cells covering over the villi, become synthesised by protoplasmic action into proteid. In this way each animal forms its own proteid, and I believe there will be no dispute upon this point. Digestion first of all splits up proteids into principles ready for the exercise of protoplasmic action, and these principles, lying within the sphere of influence of the protoplasmic cells of the villi, become re-synthesised into proteid material. With respect to the cleavage sugar from ferment action, again it has to be remarked that there is obscurity in testing for the sugar with the copper test. Peptone interferes with the reaction, and, if it had not been so, in all probability it would have been long ago known that proteid matter had a glucose constitution.

I have shown that from proteid matter we can get by the action of alkalies, acids, and ferments a principle which gives the reactions of a carbohydrate, but the sugar is not fermentable. If the elements are so closely bound together that they are difficult of separation from the proteid body in the first instance, it is not surprising that we should get a sugar offering resistance to alcoholic fermentation occurring from yeast. Chemists and physiologists admit that gummose obtained from mucin is in reality a sugar, but it is not fermentable. I have not been able to discover that any statement has been made with regard to the optical activity of gummose. I have had the cleavage sugar from proteid submitted to the test of optical rotation, and, as far as the evidence goes, the sugar is not optically active. I say, I have not been able to find anything stated about the optical properties of gummose. I have searched, but have not succeeded in finding any information.

CARBOHYDRATES IN RELATION TO FLESH AND FAT FORMATION.

Proof has been given that carbohydrate matter may be incorporated with nitrogenous matter to form proteid, and at the same time I think it may be considered that proof has been furnished that the carbohydrate molecule is susceptible of being removed or extracted from the proteid so formed. This brings us to look upon carbohydrate matter as standing in a totally different position from that which it has been looked upon hitherto as holding. The old classification by Liebig of foods into flesh-forming principles and heat- and force-producing principles has been hitherto upheld as correct. Nitrogenous matter was considered to be the flesh-forming portion of our food, but what I have placed before you indicates that carbohydrates must also be regarded as contributing to flesh-formation. If carbohydrate is incorporated with nitrogenous matter in the production of proteid, it becomes at once a flesh-former, and in this way carbohydrate matter is placed, as I have said, in a totally different position from what it has been considered previously to hold. Next, carbohydrate matter is susceptible of conversion into fat. This can be shown to be readily open to demonstration. Let me appeal again to the yeast cell. I have already appealed to it to show the transmutation of

carbohydrate matter in the direction of dehydration; I have appealed to it to show that synthesis of carbohydrate matter with a simple nitrogen-containing compound results in the production of proteid; and now I will appeal to it to demonstrate the conversion of carbohydrate matter into fat. Yeast contains a certain amount of fat. This has been shown by Pasteur. Yeast cells can grow in a solution of sugar, ammonium nitrate (containing no carbon), the mineral matter of yeast—these three solid representatives—and water. Now, yeast growing in a liquid containing these materials only and being found to contain fat, no source is left for the fat except the sugar. You have here a demonstration of the conversion of sugar into fat. Again, in the higher vegetable organisms—in the fatty seeds the fat is preceded by starch. In the early stage of the development of the seed starch exists, but this becomes replaced afterwards by fat. There is not only, as has been shown, the convertibility of carbohydrate into fat, but evidence is adducible that the reverse takes place. Take an oily seed like a walnut. It contains no starchy matter. The fatty matter leads during growth to cellulose just in the same manner as the starchy matter of seeds generally passes into cellulose. In the first place in the case of the oily seed, starch is converted into fat, and in the next fat is reconverted into carbohydrate.

CARBOHYDRATE METAMORPHOSIS.

Now let us review for a moment the position that we have reached, simply from reading nature, with regard to carbohydrate matter. In the first place it is transmutable in the direction of dehydration. At the same time the molecules synthesise. This application of carbohydrate matter takes place very largely in the vegetable kingdom and proceeds no further. We get the application of carbohydrate matter simply by this transmutation into cellulose and starch. There is comparatively little of this occurring in the animal kingdom. Next we have seen that carbohydrate matter is synthesised into proteid. This takes place in both animal and vegetable kingdoms, for it is found that the proteids of both kingdoms of nature yield carbohydrate upon being treated in an appropriate manner. Further, carbohydrate matter is transformed into fat. I wish you to fix your attention upon these three directions in which carbohydrate matter passes.

THE GLYCOGENIC DOCTRINE REFUTED.

The glycogenic doctrine at present believed in stands in direct opposition to the evidence afforded by exact experiment, and the ground requires to be cleared from the error entailed by it before we reach a proper position for seeing or following the application of carbohydrate matter in the animal system.

You know what the glycogenic theory consists of. It supposes that carbohydrate matter taken into the alimentary canal becomes absorbed and passes through the portal vein to the liver to be there in part temporarily stored up as glycogen, but ultimately to escape as sugar from the organ through the hepatic veins into the general circulation and to be carried to the systemic capillaries for disposal somehow in the tissues. By this theory we are simply led into absolute darkness. No one has suggested a reasonable explanation of the manner in which the carbohydrate matter is disposed of in the systemic capillaries. Not only is carbohydrate matter, according to the glycogenic theory, assumed to pass into the general circulation in this way, but when the carbohydrate matter is not directly taken with the food the liver, it is said, splits up albuminoid principles and forms glycogen, from which sugar is subsequently given to the general circulation. Now, in support of this doctrine it is asserted that the liver is saccharine to an extent that other parts of the body are not; that the blood escaping from the liver contains sugar to a greater extent than the blood which is going to it—the blood that is contained in the portal vein; and likewise that the blood on the venous side of the systemic capillaries contains less sugar than that on the arterial side. Everyone of these statements from a physiological point of view is absolutely unfounded and wrong. Not only is there not a particle of valid foundation in support of the glycogenic theory, but the glycogenic theory is absolutely incompatible with the order of things found to exist in the animal economy.

First of all, let us look at the statement of there being more sugar in the liver than in the other structures of the body. There are two points to consider with reference to sugar—its amount and nature. There is no difficulty whatever in obtaining precise information regarding both. It is astonishing the precision attainable in analyses conducted with the ammoniated cupric test. The process of analysis is exceedingly simple. All that is required is to take the material brought to a fine state of division and extract with alcohol. The sugar is dissolved out, and the glycogen which may be present is left in the residue. The alcoholic extract after filtration is evaporated down to a small bulk and divided into two portions, one of which is titrated at once with the ammoniated cupric test, while the other is boiled with sulphuric acid and converted into glucose previous to titration. In this way we get the nature of the sugar as well as the amount. If glucose is dealt with, the figures before and after treatment with sulphuric acid come out alike or nearly alike. When the figures are greater after sulphuric acid than before, it means that the sugar has a lower cupric oxide reducing power than glucose. You will see that this is the kind of sugar which generally exists in the various parts of the animal system.

I will now direct your attention to the two tables before you, and you will perceive that the one representing the condition of various tissues shows that in all of them sugar is present, and in some of them to a considerable extent. For instance, the muscles of the hind leg of a dog contained sugar to no less an extent than 9·292 per 1000 expressed as glucose. The muscles from other parts of the animal contained less. I have made a large number of analyses of muscle in various animals, but the representation before us may be taken, with the exception of the high figures I have referred to, as an average expression. The last of the series of spleens gives 5·819, and one of the lung series 4·870 per 1000 expressed as glucose. Ordinarily in the various tissues the amount of sugar expressed as glucose may be said to range from somewhere about 2 to 3 or 4 per 1000. The figures under the heading "cupric oxide reducing equivalent" are calculated from the cupric oxide reducing power before and after sulphuric acid. They show a cupric oxide reducing power in all cases below, and in many much below, that of glucose.

TABLE SHOWING THE AMOUNT AND NATURE OF SUGAR IN VARIOUS ORGANS OF THE BODY.

	Sugar per 1000 expressed as glucose.		Cupric oxide reducing equivalent.
	Before sulphuric acid.	After sulphuric acid.	
1. Muscles of a dog—			
Tongue	2·458	3·727	66
Diaphragm	1·662	2·239	74
Heart	2·855	4·700	61
Hind-leg	6·502	9·292	70
2. Spleen of—			
Horse	1·320	1·634	81
Sheep	1·984	2·777	71
Dog	1·587	1·827	87
Dog	2·032	2·777	73
Dog	3·342	5·819	57
3. Kidney of—			
Horse	1·572	2·575	61
Horse	0·896	1·132	79
Dog	1·685	2·229	76
Dog	1·123	1·766	64
Sheep	0·960	1·380	70
4. Pancreas of—			
Horse	1·463	2·688	54
Sheep	0·731	1·388	53
Sheep	0·712	0·725	98
Dog	0·812	1·433	57
Dog	2·314	3·343	69
5. Lungs of—			
Horse	1·545	2·183	71
Dog	3·186	4·870	65
Dog	0·947	1·406	67
6. Brain of—			
Dog	0·790	1·500	52
Dog	1·318	1·706	77
Dog	0·720	1·216	59

Looking next to the liver, the table referring to it shows that when the organ is taken in a manner to represent the condition belonging to life, as far as the amount of sugar and the kind of sugar are concerned, there is no difference whatever between the liver and the other structures of the body. If ordinarily taken after death and not dealt

with in such a manner as to prevent post-mortem change, then undoubtedly the liver stands in a different position from the other structures of the body.

TABLE SHOWING THE AMOUNT AND NATURE OF SUGAR IN LIVER AT THE MOMENT OF DEATH AND AT SUBSEQUENT PERIODS.

	Sugar per 1000 expressed as glucose.		
	Before sulphuric acid.	After sulphuric acid.	Cuprie oxide reducing equivalent.
Liver frozen instantly after death.			
First Rabbit	1·601	2·142	75
Second Rabbit	2·344	3·248	72
Third Rabbit	1·946	2·828	69
Fourth Rabbit	1·664	2·400	69
Liver frozen instantly and taken ordinarily after death.			
Fifth rabbit—			
Frozen instantly after death	2·000	2·260	88
Few minutes after death	12·940	12·940	Glucose.
Following day	34·340	36·820	93
Sixth rabbit—			
Frozen instantly after death	0·980	1·060	92
Few minutes after death	11·560	12·130	96
Following day	33·280	32·530	Glucose.
Liver of cold-blooded animals taken ordinarily a few minutes after death.			
Tortoise A.	1·250	2·170	57
Tortoise B.	0·852	1·437	59
Frogs	1·316	1·724	76

I was not in former times able to place this matter before others in as clear a light as I can do now, analytical procedure not having attained the satisfactory position it holds at present. In my next lecture I will proceed further with the question of the untenability of the glycogenic doctrine preparatory to endeavouring to show the way in which carbohydrate matter becomes disposed of in the animal body.

A Communication

ON THE

CHOLERA VIBRIO AND THE BACTERIOLOGICAL DIAGNOSIS OF CHOLERA.

Specially written for THE LANCET

BY PROFESSOR MAX GRUBER OF VIENNA.

TRANSLATED BY J. W. WASHBOURN, M.D., F.R.C.P. LOND., F.R.C.S. ENG.

(Concluded from page 6.)

WE must treat in detail two methods of examination—the so-called cholera-red reaction and the inoculation of animals—since Koch[1] has recently laid great stress on these methods for the purposes of differential diagnosis. The cholera-red reaction, which was discovered by Pohl, depends on the formation of nitroso-indol, and occurs when sulphuric acid is added to a fluid containing both indol and a nitrite. It occurs in cultivations of Koch's vibrio in broth or peptone solution, because the vibrio converts the nitrates into nitrites and at the same time produces indol. Koch asserts that the cholera vibrio differs from the other vibrios in possessing this property. This reaction is best obtained in pure cultivations cultivated at 37° C. in a 1 per cent. salt and 1 per cent. peptone solution. After five to six hours' growth concentrated sulphuric acid free of nitrogen is added drop by drop and the mixture shaken (about one drop of sulphuric acid is added to 1 c.c. of the liquid). A red or bluish-red colour appears either at once or at the latest within a quarter of an hour. It is very unfortunate that all kinds of peptone[2] are not suitable for this reaction. The peptone must accordingly be first tested with a pure cultivation of Koch's vibrio. Even then it is not always certain that every kind of cholera vibrio will give the reaction. In a communication from Wiener[3] and myself we showed that a race of cholera vibrio, which I received from R. Pfeiffer of Berlin and which I have already mentioned was identical with the "Massauah" cholera vibrio, did not give this reaction. Different races of cholera vibrio grown in the same peptone gave good reactions. In this respect Slavo[4] has met with difficulties with races of the "Massauah" vibrio. At present I use a peptone of Witte's which, with cultivations of the "Massauah" vibrio, gives a reaction within five hours. We are thus surrounded by puzzling difficulties, and when the reaction fails we are not certain that we are not dealing with the cholera vibrio. Still more troublesome is the fact that many species of vibrio, which have been found unconnected with cholera, give the reaction quite as well as the cholera vibrio. This reaction is given within four to six hours by Metchnikoff's vibrio, vibrio berolinensis, V. danubicus, and by at least three or four others which, as has been already mentioned, have been isolated by Teich and Wiener from the water of the Vienna Danube Canal, and besides these the phosphorescent vibrio isolated by Dunbar[5] from the water of the Elbe. In twenty to twenty-four hours the reaction is given by the vibrios cultivated by Bonhoff,[6] Sanarelli, and Blachstein[7] from the water of the Seine (Saint Cloud, Versailles, Point du Tour). Many other kinds of vibrios give this reaction as the cultivations become older. Thus there is no specific peculiarity in the cholera vibrios, only quantitative differences exist in this respect between many different species of vibrios, and the constancy of these differences is questionable. Even if one neglects these doubts then the occurrence of the reaction in cultivations five hours old has only the significance of a characteristic of a group and not of a species, supposing one does not consider at the outset all those kinds which give the reaction at this stage as varieties of the cholera vibrio. This, however, does not appear to correspond with the facts of the case.

The cholera-red reaction, nevertheless, possesses a certain value, since a number of bacteria, simulating the cholera-vibrio, can in this way be differentiated; for example, the vibrio Deneke, which could not be distinguished by gelatine cultivations from the cholera vibrio. At any rate, this is the case with my vibrio Deneke, which no longer grows at 37° C. Unfortunately, I neglected to make notes at the time; nevertheless, I feel sure I am right in saying that it did not always behave in this way, but at the beginning grew quite well at this temperature. It is still questionable whether a vibrio Deneke which grows at 37° C. gives the cholera-red reaction or not. If it does give the reaction it could only be distinguished from the cholera vibrio by the formation of dextro-rotatory lactic acid as observed by Kuprianow.[8]

The diagnostic value of inoculation of animals is even less than that of the nitroso-indol reaction. Koch and R. Pfeiffer assert that the cells of the cholera vibrio contain a poison and that when small quantities of a young agar cultivation are suspended in broth and injected into the peritoneal cavity of a guinea-pig the animal dies of an intoxication with the poison. They also say that 1·5 milligramme of a young agar cultivation is the fatal dose for guinea-pigs of 300 to 350 grm. in weight, and that no other species of vibrio, inoculated in the same way, produces symptoms in any way resembling those produced by the cholera vibrio. I must most emphatically oppose these views. With regard to the nature of the disease produced in guinea-pigs I will confine myself to the remark that I still hold to my original opinion, and that it is a true infection and not an intoxication. I shall treat of this matter in a special paper. Nevertheless I must confess that, through too limited a number of experiments, I was wrong in saying that the fatal disease produced in guinea-pigs after intra-peritoneal inoculation possessed specific character. From fresh experiments I must agree with Klein[9] that similar symptoms can be produced by infection with the most diverse kinds of bacteria. Koch is also in error with regard to the fatal dose. Of all the races of vibrios obtained from

[1] Loc. cit.

[2] Berichte der Deutschen Chemischen Gesellschaft, Band xix., p. 1162. 1886.

[3] Archiv für Hygiene, Band xv., p. 241.

[4] Rivista d'Igiene e Sanita publ., 1892, No. 19.

[5] Deutsche Med. Wochenschrift, 1893, No. 33.

[6] Archiv für Hygiene, Band xix., p. 248.

[7] Annales de l'Institut Pasteur, 1893, No. 10, pp. 689 and 693.

[8] Archiv für Hygiene, Band xix., p. 282.

[9] Centralblatt für Bacteriologie, Band xiii., No. 13. Subenheim; Hygiene. Rundschau, iii., 1893, No. 22.

cholera cases the vibrio from Massauah (both those which Pfeiffer and those which Metchnikoff were kind enough to send me) was the only one which always killed guinea-pigs weighing 300 to 350 grm. in doses of 1·5 milligramme. A still smaller dose of this very virulent vibrio was fatal. On the contrary, in the case of all the other races of cholera vibrio doses of 1·5 milligramme were often insufficient, and frequently considerably larger doses were necessary. I am indebted to Dr. Kroliewicz of Lemberg, who is entrusted with the bacteriological examination of suspected cholera cases in Galicia, for the opportunity of examining a large number of young cultivations from cases of cholera in Galicia. Of six different races only one was fatal in doses of 1·25 to 2·5 milligramme in the case of three animals, while three others withstood inoculation with 0·75 to 3·0 milligramme (cholera case from Mlynisko); on the contrary, the races obtained from cases in Tulukow, Peczenicyn, Mitulicyn, Krakau, and Beskid were never fatal in doses of 1·5 milligramme; the latter on one occasion was not fatal in a dose of 3 milligrammes. A race from a case of cholera in Goarshausen in Germany, for which I am indebted to C. Fraenkel in Marburg, was fatal only once in doses of 1·5 milligramme, while two animals withstood the effect of a similar dose. Two animals recovered after injection of 2 and 7 milligrammes of a fresh cultivation from Budapest. Quite young cultivations, which I cultivated myself from the intestinal contents of three cases of cholera occurring this year in Vienna, were not fatal in doses of 1·5 milligramme, and even not in doses of 3 milligrammes. Only seven out of thirty animals which I inoculated with doses of 1·5 to 3 milligrammes died, and of these four had received doses of 3 milligrammes. The least virulent of all young races which I have up to the present observed was one obtained from a case in Krakau in 1892, and for which I am indebted to Professor Weichselbaum. I inoculated five animals with increasing doses of agar cultivation thirteen, seventeen, and twenty-four hours old, from races of nine to twelve days of age (doses of 5, 10, 25, 38, and 54 milligrammes). All the animals survived, and only those which received the largest doses showed any marked fall of temperature.

From these examples it is evident how different is the virulence of various races of vibrios, and, besides, the individual resistance of the animals towards one kind of vibrio cannot be looked upon as an invariable quantity. This alone renders valueless the views of Koch with regard to the inoculation of animals. He has not only considered the fatal dose to be much smaller than it is, but he has also been deceived in imagining that other vibrios are practically non-virulent. I have made a large number of experiments on the minimal fatal dose of many species of vibrio by intra-peritoneal injection, and I have come to the following conclusions. The vibrio Metchnikoff (cultivated for years in the laboratory) is fatal in a few hours in doses of 0·75, 1·5, and 3 milligrammes; vibrio berolinensis is fatal in doses of 3 but not in doses of 1·5 milligrammes; vibrio danubicus, recovery after doses of 0·75, 1·5 (three animals), 2·5, and 3 milligrammes, but doses of 1·5, 3·0, and 4·0 milligrammes were fatal; vibrio proteus (Finkler-Prior) recovery after doses of 1·5, 3·0 (two animals), and 6·0 milligrammes; on the other hand, fatal in doses of 1·5, 3·0, and 6·0 milligrammes.

With regard to the fatal dose there is, then, no material difference between Koch's vibrio and the last three mentioned. The post-mortem appearances[10] are just the same after infection with vibrio berolinensis, vibrio danubicus, vibrio proteus, and the cholera vibrio. I must especially draw attention to the fact that pneumonic symptoms do not occur after intra-peritoneal infection with vibrio danubicus, although they are so marked after infection per os.

The vibrio Metchnikoff is the only one which differs materially in these experiments from the cholera vibrio. It surpasses the most virulent "Massauah" cultivation in its pathogenic properties and in its distribution in the organs of the infected animals it differs from all the other species. Even when the disease runs its course in from three to four hours the vibrio Metchnikoff can be found in large numbers all through the vascular system producing thus a true septicæmia, while none of the other species of vibrio are able to grow in the blood of guinea-pigs. The inoculation of animals is thus of value in distinguishing the vibrio Metchnikoff from the cholera vibrio, but for the diagnosis of cholera it is useless. He who relies on the inoculation of animals and the nitroso-indol reaction will certainly fall into errors. We have thus exhausted our methods of determining the species of the cholera vibrio and the result of our investigations is not reassuring. Most of the characters of the vibrios are of so variable and undetermined a nature that we are not now in the position of saying with certainty whether the cholera vibrios are in genetical relationship with other vibrios resembling them or not; indeed, we cannot with certainty decide whether all kinds of vibrios found in cholera belong to a single species. We must be contented with having found a characteristic which appears to be only possessed by the vibrios met with in cholera.

Up to the present we have only considered the bacteriological investigation of the pure cultivation of the vibrios, without reference to their origin and the material in which they are found. If we presented to our readers only this side of the question we should give a good representation from the standpoint of our present bacteriological knowledge, but should arouse doubts which, in my opinion, are not justified. If we look at Koch's vibrio in connexion with the disease cholera, considerations appear which, in spite of the bacteriological difficulties seem to place the specificity, and even the etiological signification, of this microbe beyond doubt. Looking over the facts, it appears that the original assertion of Koch has been essentially supported by the experience of the last European epidemic, and this assertion is that in Asiatic cholera comma bacilli capable of cultivation in gelatine are constantly present in the evacuations, and that they are generally present in large numbers and often in pure cultivations; on the other hand, they are not present in the normal intestinal contents and evacuations, and in the sporadic and endemic cases of diarrhœa. Up to the present, when the examination has been undertaken by experienced bacteriologists at the right time, vibrios capable of cultivation and with the characters mentioned have been found in the intestinal contents of all cases of epidemic or sporadic diarrhœa which have occurred in definite relation with epidemics of Indian cholera.

The number of the vibrios found in the evacuations or intestinal contents, even at the height of the disease, certainly does not bear any relation to the severity of the attack. In severe cases they may be present in small numbers, and in the mildest cases may be present in enormous numbers, as Lustig[11] and I[12] first discovered. This, as well as the infection experiments which have been performed on the human subject by Pettenkofer and Emmerich, Metchnikoff, Hasterlik, and others, only prove that in addition to the vibrio there are other conditions necessary to determine the severity of the attack. On the other hand, these infection experiments support the teachings of Koch, since they at least prove that the vibrios take a part in the production of the symptoms of the disease. In many cases the number of vibrios is so great in the excreta of the patients and their groupings so characteristic that in more than half the cases the diagnosis can be made with the greatest probability from a simple microscopical examination. (No one, with the exception of V. Finkler,[13] has ever seen such appearances except in cases of Asiatic cholera.) On the other hand, the number of cases of diarrhœa in the course of cholera epidemics which have been examined in different parts of the world by experienced bacteriologists, and in which the cholera vibrio has not been found, is too small to raise any doubt as to the etiological signification of the vibrios.[14] Such cases may, indeed, have been cases of intercurrent cholera nostras.

In any case it will be necessary in the future to follow up these cases most carefully, for it cannot be overlooked that in thus explaining such cases of diarrhœa without vibrio, and occurring at the same time and in the place where cholera is epidemic, we may be led into the fallacies of a *petitio principii*. It would be a most severe blow to Koch's views if it could be shown that severe cases of diarrhœa without the presence of vibrios are a common accompaniment of an epidemic of cholera, or if it were shown that such fatal epidemics as

[10] The new species cultivated by Wiener from the Danube canal comports itself in the same way.

[11] Zeitschrift für Hygiene, 1887, Band. iii., s. 146.

[12] Wiener Med. Wochenschrift, 1887, No. 7 and 8.

[13] Tageblatt der 58. Versammlung Deutscher Naturforscher und Aerzte zu Strassburg, p. 738.

[14] Fürbringer: Deutsche Med. Wochenschrift, 1892, No. 37. Guttman: Berliner Klin. Wochenschrift, 1892, No. 41. Kirchner: Berliner Klin. Wochenschrift, 1892, No. 43. Du Mesnil: Munchener Med. Wochenschrift, 1892, No. 50. Rumpel: Deutsche Med. Wochenschrift, 1893, No. 7.

have been described by Carp[15] in Wesel are of more frequent occurrence. I, however, do not think this probable. Were this the case, then the observations of Rumpel[16] and others of the finding of Koch's vibrio in the fæces of healthy individuals—a fact sufficiently noteworthy by itself—would appear in quite a different light. These observations of Rumpel do not upset Koch's views, since they were made on individuals who were in relationship with cholera patients or who lived in cholera-infected localities, so that there could be no doubt about the origin of the vibrios. For the rest, a vibrio resembling the cholera vibrio was once found by Metchnikoff[17] in the fæces of a patient suffering from constipation. Absolute identity was not asserted, and no exact description published. In the isolated cases described by Finkler and Prior[18] and by Prior alone, of the growth of vibrios in cholera nostras, the cultivations were those of the vibrio proteus, a species quite different from the cholera vibrio. In the isolated cases, in which vibrios have been cultivated from the intestinal contents or evacuations of healthy individuals, or from patients suffering from other diseases, it appears that only a few vibrios were present. In addition all the observers[19] state that the vibrios were easily distinguishable from the cholera vibrio. In any case, these observations show that great care should be taken in making bacteriological examination of suspected cases of cholera, and Koch[20] was certainly wrong in ridiculing the precaution taken to avoid confusion with the vibrio proteus. It is not true that this species has only been found once in stinking stools. Finkler and Prior state that they found it in ten cases of cholera nostras, and Finkler[21] states that in two cases he found it present in pure cultivations. I have found it[22] in the decomposed intestinal contents of a patient who had died with symptoms suspicious of cholera, Lustig[23] twice in cases of cholera in addition to Koch's vibrio, and Knisl[24] in the intestinal contents of a person who had committed suicide. That the vibrio proteus is not a very rare species is shown by the observations made by Max Teich and E. Wiener in my institution during the autumn of last year. This species was frequently isolated from the water of the Vienna Danube Canal. We have cultivated it through many generations and shall be glad to give cultivations to anyone who requires them.

In spite of these observations the second part of Koch's proposition is, nevertheless, generally correct—i.e., that spiral-shaped bacteria simulating the comma bacillus are not found either microscopically or by cultivation in the intestinal evacuations of healthy individuals or of patients suffering from other diseases. In the course of years I have examined bacteriologically twenty cases of endemic diarrhœa (cholera nostras). In many of these cases I have been able to find by microscopical examination spiral bacteria in large numbers. They were, however, easily distinguished by their appearance from the comma bacillus. They were long, sharply curved, and somewhat slender S forms, staining badly, single or united into zoogloea masses, and with the ends pointed. We were doubtless dealing with the well-known parasites of the small intestine described long ago by Escherich. Corresponding to this, I never succeeded in cultivating any kind of vibrio from any case of cholera nostras. Neither have I ever been able to cultivate vibrios from the fæces of healthy persons or of individuals suffering from diarrhœa, not even when vibrios similar to the comma bacillus could be detected microscopically. In former years I made a large number of such examinations. These negative results in cases of cholera nostras have an especial importance, since they show that the comma bacilli found in Asiatic cholera are not normal inhabitants of the intestinal canal, or widely distributed saprophytes, which take the opportunity of multiplying to an enormous extent, on account of the diseased condition of the intestines.

The following are the conclusions I would draw: 1. The views of Koch are true, that in cholera there are present vibrios which can be distinguished from all others occurring in the intestinal contents. In addition, the vibrio is of etiological significance, although many observations render it necessary to make wider investigations in order to further prove the truth of Koch's propositions. 2. It is possible that the vibrios found in the different epidemics of cholera belong to several closely related species. Anyhow the cholera vibrio occurs in several sub-species morphologically different. 3. It is difficult to distinguish the different species of vibrio, and especially the cholera vibrio, from one another. 4. Some of the hitherto accepted distinguishing characteristics of the cholera vibrio are of no practical value, others have only the signification of characteristics of groups of vibrio species, and are therefore not sufficient in difficult cases to distinguish the species. Such characteristics are the following: gelatine stab cultivations, agar cultivations, potato cultivations, broth cultivations, the behaviour towards milk, the reaction to litmus broth, the nitroso-indol reaction, and the intra-peritoneal inoculation of guinea-pigs. 5. In the examination of suspected cases of cholera these difficulties are of not much importance, since the vibrios found in the evacuations of other cases are easily distinguished from the cholera vibrio, and in the majority of cases of cholera the vibrios found are quite characteristic. 6. On the contrary, we must look with suspicion on the discovery of cholera vibrios in other material than the intestinal evacuations in connexion with cases of cholera. In the same way we must be suspicious of the identification of vibrios found in water with the comma bacillus, and occurring without any known connexion with Indian cholera. Especially must we be careful since these observations have generally been based upon the criteria above mentioned and discussed. 7. The microscopical appearances of quite young colonies of Koch's vibrio in 10 per cent. gelatine appear to be almost absolutely characteristic. At any rate I have not met with similar appearances in any other kind of vibrio species. The observations, however, must be made under certain definite conditions in order to be reliable.

[15] Deutsche Med. Wochenschrift, 1893, No. 2.
[16] Loc. cit.
[17] Annales de l'Institut Pasteur, 1893, No. 7, p. 565.
[18] Ergänzungshefte zum Centralblatt fur Allg. Gesundheitspflege, 1885, i., fasc. 5, 6.
[19] B. Fischer (vibrio helcogener), Deutsche Med. Wochenschrift, 1893, No. 49. Koch, loc. cit., 338. Zörkendörfer: Prager Med. Wochenschrift, 1893, No. 43.
[20] Loc. cit. [21] Loc. cit.
[22] Wiener Med. Wochenschrift, 1887, Nos. 7 and 8.
[23] Loc. cit. [24] Fortschritte der Medicin, 1886, No. 4, p. 144.

A CASE OF PERINEAL DISPLACEMENT OF THE TESTICLE.

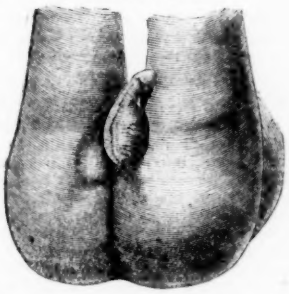
BY BILTON POLLARD, B.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO UNIVERSITY COLLEGE HOSPITAL, AND SURGEON TO THE NORTH-EASTERN HOSPITAL FOR CHILDREN.

ECTOPIA PERINEALIS, which is the commonest form of displacement of the testicle, comprises two varieties—the scroto-femoral, in which the testicle occupies the groove between the scrotum and the thigh; and the true perineal, in which the testicle is located behind the scrotum, about an inch and a half in front of the anus and close to the median raphé. The case reported below was an instance of the first-mentioned variety. It is not recorded as a mere instance of ectopia testis, for, though uncommon, the varities of displacement of the testicle are sufficiently well known; it is reported in order to illustrate a little device which proved useful in rectifying the malformation, and because it is possible to record the state of the parts seven years and a half after the operation.

An infant aged one month was admitted to the North-Eastern Hospital for Children in October, 1886. The left testicle occupied its proper position in the scrotum, but the right one lay in the posterior part of the groove between the scrotum and the thigh, where it formed a distinct projection, as shown in the accompanying engraving (Fig. 1), which has been executed from a photograph. The right side of the scrotum was flattened, and appeared to be badly developed. Defective development of one side of the scrotum has been advanced as an explanation of the malposition. It is more probable that it is a result rather than the cause of the malposition, and in this case the smallness of the scrotum was more apparent than real. The testicle was not very movable. Its spermatic cord could be traced upwards to the external abdominal ring. An incision was made from just below the ring to the lower end of the testicle. The testicle and spermatic cord, with their coverings, were then raised from their bed, as in the operation of castration, and turned upwards as far as the external abdominal ring. An incision was next made into the lower part of the scrotum, and a new bed was prepared for the testicle there. The scars of these incisions are shown in the engraving (Fig. 2), which has been executed from a photograph which was taken seven and a half years after the operation. A

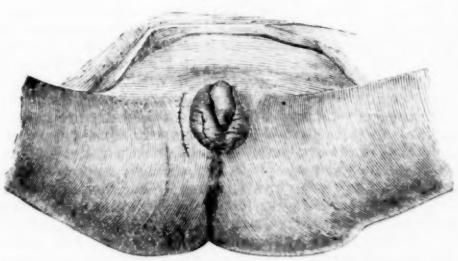
sinus forceps was then thrust from this wound through the cellular tissue of the upper part of the scrotum to the upper part of the first incision near the external abdominal ring, and its blades were separated so as to dilate a track for the artificial descent of the testicle. Through this track the testicle was pushed down to its fresh bed at the bottom of the scrotum. Both wounds were then closed with sutures. They healed by first intention, and the infant was discharged on the tenth day after the operation. The testicle had no tendency to return to its former position, and indeed this was not possible, for the two wounds only communicated by a narrow track, which connected the upper ends of each and along which the testicle had only been forced under considerable pressure. The boy was seen again seven and a half years after the operation, and the photograph from which the

FIG. 1.



accompanying engraving (Fig. 2) was made was taken then. The testicle occupies its natural position in the scrotum. It is as large as its fellow, and when the inner side of the thigh is stroked in the way the cremaster reflex is excited the testicle is retracted as thoroughly and as briskly as the left one is under similar circumstances. This, of course, shows that the cremaster muscle had been transplanted along with the testicle and that its development has not been impaired. The operation in this case was performed when the child was only one month old and both wounds healed by first intention. Most authorities recommend that transplantation of the testicle should not be attempted until the child is two years old, owing to the difficulty of keeping the wounds aseptic at an earlier age. This is not an insuperable difficulty, and so, seeing that misplaced testicles are likely to develop badly, it is wiser to perform the operation during the first few months

FIG. 2.



after birth. It is, of course, different in cases of incompletely descended testicles, for in them it is possible that further descent may be effected by natural means alone. Transplantation of the testicle from the perineum to the scrotum has been attempted several times, but not always with success, and, so far as I am aware, the plan adopted in this case has not been tried before. Attempts have been made to reach the testicle through a single scrotal incision and to draw it forwards to its proper place. Its tendency to slip back to its original position has necessitated its being stitched to the scrotum. The plan adopted in this case not only got over this difficulty but also prevented retraction of the testicle towards the external abdominal ring, as is apt to occur when the scrotal and perineal incisions communicate freely at their upper extremities. The perfect functional activity of the cremaster muscle which was observed seven and a half years after the operation is an additional feature of interest in this case.

Harley-street, W.

SMALL-POX IN A CASUAL WARD.

BY W. M. DUNLOP, M.B., C.M. GLASG.,
RESIDENT MEDICAL OFFICER, ST. PANCRAS WORKHOUSE INFIRMARY, N.W.

ALTHOUGH my acquaintance with casual ward life is not so realistic as that of a certain versatile and able writer who once upon a time sought admission and actually lived and slept as a tramp for one or more days and nights for an ultimate literary purpose, still I have seen sufficient of this nomadic section of civilisation to make it probable that my observations and experience may not be without general, if not, indeed, of medical interest. And it happened in this way. In the early part of last year, when a recrudescence of small-pox occurred, it came to the knowledge of the Local Government Board that several cases of the disease had appeared in casual wards of the metropolis and elsewhere, and the Board therefore issued a circular letter to the Poor-law guardians suggesting the propriety of a systematic daily medical inspection being made of the wayfarers, with the primary object of detecting small-pox and dealing with the cases at once. I was appointed to perform this duty at the casual wards of this parish, the period of inspection extending over seven months—from Feb. 28th to Sept. 30th, 1893. I made my visits nightly between 7.30 and 8.30 (the hour in which nearly all good casuals come in), and during these seven months I passed in review 3896 tramps, comprising a motley crew of 3197 men and 630 women, and, I grieve to add, 69 children, mostly girls. Three cases of small-pox occurred at different times, and in every case the casuals applied for admission either with the eruption on them or just appearing, and requiring only a few hours' observation to ensure the diagnosis. They had, in fact, been wandering about in this infected state, and had it not been for the Board's valuable suggestion they would probably have gone at large once more, circulating as active centres of infection and thus swelling the figures in that "diffusion of small-pox" to which frequent reference is made in the columns of THE LANCET. All the cases were sent as soon as possible to hospital, the remaining casuals were vaccinated, and the wards were closed until they had been efficiently fumigated and disinfected. A curious incident happened on our first disinfection. After the ward door had been sealed up so as to prevent the escape of the fumes of the material used, the superintendent's cat, a fine tabby, was nowhere to be found; next morning when the door was reopened the animal was found lying just inside in a dazed condition, from which it soon recovered on being taken out into the fresh air, after having been in the sulphurous chamber for over sixteen hours. This fact may make the sceptic ask: "If this were all the effect the fumes had upon the unfortunate cat, how did the infective germs fare?" Perhaps, however, the incident lets a side-light in on the fable about the cat having nine lives. As has been said, vaccination was performed in all cases where necessary; a considerable number objected, but, as a rule, the great proportion of them, after persuasion and a little reasoning, readily assented. A few, however, declared that they would rather die of small-pox, or have their arms cut off at once, or have some other equally unnecessary thing happen to them. On account of their wandering habits of life a very large proportion of these tramps were either not vaccinated at all or very inefficiently protected, and thus these inspections had not only the value of their original design, but they also afforded frequent opportunities of offering, as I did, the benefits of vaccination to these people. It was by no means uncommon, especially among the casuals of older years, to see their faces and bodies deeply pitted from confluent small-pox which they had had in their younger days; none of them had any knowledge of ever having been vaccinated—several did not know what it meant—and in none of the cases could I trace any vaccinal cicatrix.

As regards diseases other than small-pox I found these casuals remarkably free from all the ordinary ailments which flesh is heir to; many were, as a matter of course, footsore; one of the "army men" had marked aortic aneurysm, and I came across a few transient cases of erysipelas which soon got well after a few days in our

infirmary. Several of the old tramps were much crippled from chronic arthritis; one old woman of seventy-seven summers was so much so, and was so enfeebled by reason of her advanced age, that I suggested to her that it would be more comfortable for her if she would allow me to send her as a patient into our wards for the infirm. She very politely thanked me, and added, "Oh, no; it had not come to *that* yet." The "that" meant the workhouse and all its belongings, of which the habitual casual has a mighty scorn; and she went on her way rejoicing, if hobbling.

As regards veracity, the regular tramp is prone to make departures from the truth when interrogated as to what casual ward he slept in "last night" or other day during the week. "Where did you sleep last Tuesday?" inquires the inspector. "Barnet," quoth the tramp. "Why," says the inspector, referring to his note-book, "I saw you in Greenwich casual ward that night"; and the man replies: "It couldn't have been me; it must have been a man very like me and with the same name." The motive—the object—is to prevent his detention, which is provided for in this manner. Inspectors, specially appointed, visit all the casual wards of the metropolis at least three times a week for the purpose of identifying casuals whom they have seen in other casual wards during the past month, and all who are so identified are detained for three days, neither working hard nor faring sumptuously. This concealment of their last place of residence also affected me, because in at least one of the small-pox cases the addresses were absolutely wrong, and I was thus unable to trace the case back so as to give notice to any lodging-house, casual ward, &c., through which the infected person had recently passed. As regards personal cleanliness, the regular casual—the perennial variety—who simply moves from one ward to another month after month and year after year, is by no means the unwashed and begrimed and neglected outcast which popular opinion attaches to his class. He has a bath of clean water every time he enters the abode of his selection, and this fact once led a learned judge to make the remark that tramps were among the best-bathed members of the community.

At the inspections an examination was made of the whole skin surface in every case, and I was thus able to note some external marks of more or less interest. I saw seventeen men—oldish men—between sixty and seventy, with the letter D branded or tattooed under the *left* breast—these had been "deserters" from the army; and I saw five men who had the letters B. C. under the *right* breast—these were army "bad characters." One old man had not only both of these badges of bygone conduct still plainly visible in his wrinkled skin, but on his back was a huge, serried, furrowed cicatrix, which, he told me, was the result of six floggings of thirty lashes each inflicted forty years ago in the Indies, at intervals of about a week, the raw surface having been betweentimes "peppered." This may or may not be a yarn of the old man; but the appearances of the scar were similar to those I have observed in an undoubted case of brutal flagellation. I have also seen amongst these men some very fine examples of tattooing, notably in the case of two discharged soldiers who had gone through the last Burmese War and were operated upon in Burmah. They were elaborately decorated on almost every inch of their upper and lower limbs, while the chest of one was covered with a pastoral scene, and that of the other with a representation of the sterner circumstances of war; the former came from peaceful Devonshire, the latter from noisy Woolwich. Some of the male casuals are very young—eighteen, nineteen, and twenty years of age; some of them are half-witted and suitable only for asylums for the feeble-minded; others are nobody's children, who do not remember seeing or hearing of their parents or any relatives, and who had been brought up in their early years under the baneful influence of the workhouse. It is astonishing, it is pitiable, to see so many discharged soldiers in these casual wards; they are strong, able-bodied, muscular, presentable men for the most part, and in the prime of life, and are to all appearances gradually becoming chronic tramps and quite content with their sorry haven. They have told us that they enlisted when very young, without having learned any trade, and that on their discharge, under the short service system, they had nothing else to fall back upon. I am afraid that they do not always embrace every opportunity of earning a living, and I know of the case of one who, on it being suggested to him that he should go haymaking, replied, "No; when you go to them (the farmers) in the winter time they set the dogs on you, and now they can go and make their hay themselves."

AN ADDITION TO PRESENT METHODS OF CLOSING LARGE CONGENITAL FISSURES OF THE HARD PALATE.

BY H. M. N. MILTON, M.R.C.S., L.S.A.,
PRINCIPAL MEDICAL OFFICER, CAIRO CIVIL HOSPITAL.

THE patient was a male Egyptian child aged five years, with complete congenital cleft palate and double harelip—"gueule de loup." In order to demonstrate the *rationale* of the method adopted to cure this defect, the description of the child's condition must unavoidably be given in some detail. On admission to hospital his general condition was excellent and development perfect, except for the deformity in question. Externally the nose was flattened and expanded; the ratios of height and breadth as compared with a standard child of the same age and stature were respectively $\frac{8.9}{10.0}$ and $\frac{17.0}{10.0}$. There was complete double harelip and separation of the inter-maxillary bone from the two superior maxillæ, also a well-marked snout was attached to the septum and soft parts of the nose. The alveolar portion of the snout was on a higher level than that of the maxillæ to the extent of from two to three lines, and projected two lines beyond the alveolar process of the lower jaw; it was twisted also a little upwards and forwards. The distance between the malar eminences as compared with that of the standard child was in the ratio $\frac{7}{8}$; the eminences were, however, not prominent, the increased distance being due to a lateral expansion of the face. Internally there was a large fissure extending from the bifid uvula to the double harelip. The two portions of the uvula were separated to the extent of 14 millimetres, or seven lines, the greatest width of the bony fissure; 12 millimetres were situated between the palate bones, the fissure being narrowest (4 millimetres) where it divided to enclose the inter-maxillary bone. The alveolar processes of the superior maxillæ were more widely separated than those of the inferior maxilla to the extent of 6 millimetres, the upper teeth overlapping the lower teeth laterally in the same proportion. The upper canines coincided, when the jaws were closed, with the first lower premolars on either side. The whole alveolar process of each superior maxilla was turned slightly upwards and outwards. The palatal processes of the superior maxillæ and of the palate bone were fairly well developed, diminishing a little in width towards the posterior edge of the palate. The septum nasi was a little thickened and projected downwards to the level of the under surface of the palate. All the milk teeth had erupted, with the exception of the second right upper incisor. The snout carried three teeth, two left and one right incisor; these three teeth were turned slightly forwards.

It was evident that in the case under consideration the condition could not be explained by a simple lack of development of the palatal processes; there was evidently in addition a considerable centrifugal displacement of the various elements of the jaw. Bearing in mind the method of development of the upper jaw, one would be justified in saying that in this case the fissure was but little due to any imperfection in the formation of the elements of the jaw, and much more to the non-completion of their approximation. The points in support of this theory of insufficient approximation, as the chief factor in the production of the cleft in the case under observation, were: (1) the separation between the two halves of the bifid uvula largely exceeded the width of any possible undivided organ; (2) the upper teeth overlapped the under teeth laterally to the extent of three lines on either side; (3) the upper canines coincided when the jaws were closed with the first lower premolar; (4) the expansion of the alæ nasi was one and three-quarter times as great as in a normal child of the same stature; and (5) the alveolar process of the inter-maxillary bone projected four lines beyond that of the lower jaw and lay two lines higher than those of the superior maxilla. I can only quote with certainty the single case which has recently come under my observation, but I think it must be granted that the displacement of the inter-maxillary bone forwards and upwards and the wide separation of the two portions of the uvula exist in many cases as an evidence of the importance of insufficient approximation as an element in the production of cleft palate. Further, there is a very great similarity of mechanism in two other congenital deformities—spina bifida and extroversio vesicæ. In spina bifida one of the most

striking facts—and, it may be, a fundamental factor—is the lateral displacement—i.e., want of approximation of the laminæ vertebrales. In most cases of extroversio vesicæ the want of approximation of the two halves of the pelvic girdle is markedly existent, and has rendered possible the advantageous employment of Trendelenberg's operation of division of the sacro-iliac articulations.

I was convinced of the importance of the non-approximation in the case before me, and I therefore decided to follow out in its treatment the evident indication and to endeavour to bring about the approximation of the three bony portions of the upper jaw before attempting the union of the soft parts. The first method I adopted with this view was difficult and complicated in execution, and involved considerable disfigurement of the patient. Unfortunately, I only appreciated its disadvantages after I had tried it on one side of the face. I had considered it necessary, before attempting to approximate the two superior maxillæ, to divide their principal bony attachments to the rest of the skull. I made my first trials on the dried skull of a child aged about two years. In order to assimilate the conditions as far as possible I sawed out of the palate and alveolar process a portion corresponding to a complete palatal cleft. On the skull thus prepared the division of the nasal, zygomatic, and orbital processes was easily effected, and enabled me to completely approximate the artificially separated superior maxillæ. I then proceeded to carry out the same processes on my patient. I divided subcutaneously on the right side the zygomatic and external orbital processes without difficulty; in attempting to divide the nasal process, however, I found it so greatly thickened and so resistent as to break the fine bone forceps with which I was working. I had a few anxious moments before I satisfied myself that the broken fragment of blade was left sticking in the nasal process and had not passed down the larynx. I then desisted from any further attempt to cut through this solid attachment and found, as might be expected, that the maxilla was in no ways more movable than before. I gave up the attempt for the time, having done so far no good and having produced a somewhat alarming hæmatoma of the lower eyelid. A month later I commenced again. I did not on this occasion attempt division of bony structures. I simply took a firm grip of the alveolar processes of the two superior maxillæ with the sharp points of a strong pair of forceps, shaped somewhat like a lion forceps, and with very considerable pressure, exerted with great care, at once brought together the two maxillæ along the greater part of the fissure, the only obstacle to their complete approximation being the interposed septum nasi. The snout was then forced down without difficulty to take up its position between the two maxillæ. A delta-metal wire was next passed round the three portions of the upper jaw. Posteriorly it stretched across from the last right premolar to the last left premolar, lying below the newly approximated palate. Laterally it lay on either maxilla in the groove between the gums and teeth; anteriorly its ends were twisted together on the teeth carried by the inter-maxillary bone. The maxillæ being firmly held in their new position by the forceps, the wire was twisted up as tightly as possible, binding the three portions of the jaw firmly together. On removing the forceps the jaws sprang a little apart; but a new application of pressure and a further twist to the wire permanently fixed them so closely together that it was impossible to introduce a probe between them anywhere except at the apex of the inter-maxillary bone.

The child had absolutely no reaction after this operation and wore the wire comfortably for thirty-eight days, eating his ordinary meals after the first week. On the removal of the wire the bones retained their new positions absolutely, and a very simple plastic operation remained necessary to unite the skin and mucous membrane from the lip to the uvula. A series of photographs was taken at different stages of the operation; but, owing to the difficulty of sufficiently illuminating the oral cavity, none of them were suitable for reproduction. The experience of a single case is naturally useless as a basis for deductions, and the only opinions one is justified so far in expressing are: 1. That in some cases of fissure of the hard palate—especially, perhaps, in those in which the fissure is complete the non-approximation of the two maxillæ may be an important factor in the production of the gap. 2. That in such cases the approximation of the separated portions by forcible pressure may be possible. Such approximation is very simple in its performance, is not likely to be harmful in its results, and may greatly facilitate the subsequent operation for complete union of the soft parts. 3. It remains to be seen whether the forcible manipulation of the jaw is disadvantageous to its future development, and it may be that in some cases the approximation may entail so much deformity in the jaw as to greatly discount its possible advantages.

Cairo.

NOTES ON THE CULTIVATION OF THE TETANUS BACILLUS AND OTHER BACTERIOLOGICAL METHODS.

(*From the Bacteriological Department, King's College, London.*)

BY R. T. HEWLETT, M.D., M.R.C.P. LOND.,
DEMONSTRATOR OF BACTERIOLOGY IN KING'S COLLEGE.

Cultivation of the tetanus bacillus.—In order to obtain the chemical products for inoculation and other purposes the bacillus of tetanus may be grown without the use of any complicated apparatus, in an atmosphere of hydrogen, in the following manner. "Yeast flasks" of about 90 c.c. capacity are made use of, and are filled three parts full with a 2 per cent. grape-sugar bouillon. The neck is corked with a perforated rubber cork (Fig. 1, A) through which a glass tube (B) passes to the bottom of the flask, projecting two inches above the rubber cork and here plugged with cotton-wool. The lateral tube of the yeast flask (C) is also plugged with cotton-wool, care being taken that the plugs are loose enough to allow air to pass freely. The whole is sterilised and inoculated. The glass tube (B) which passes through the rubber cork is then connected with a Kipp's or other hydrogen-generating apparatus by means of a rubber tube, and a current of hydrogen is passed through the flask. The hydrogen bubbles through the bouillon and escapes by the lateral tube. After the gas has passed for about an hour a small capsule containing mercury (D) is applied to the end of the lateral branch, so that the open end just dips below the surface of

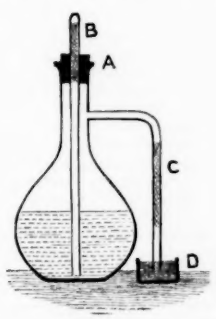


Fig. 1.

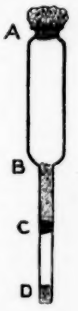


Fig. 2.

the mercury, and the tube (B) which passes through the rubber cork is sealed off in the blowpipe flame, care being taken that all the air has been expelled from the flask by a free current of hydrogen. The flask, with the capsule of mercury applied to the end of the lateral branch, can then be placed in the incubator. Thus the mercury forms a valve; air cannot enter while gases formed by the growth of the organism have free exit.

Cultivation of anaerobic organisms in agar.—With a little care the bacillus of tetanus and other strictly anaerobic organisms can be grown with comparative ease in agar. It is well to employ a grape-sugar agar, ordinary agar with the addition of about 2 per cent. of grape-sugar, and narrow test-tubes filled three parts full with the medium. The tubes are steamed for a few minutes in the steam steriliser just before use, to get rid of as much dissolved oxygen as possible, and then cooled in cold water. When the agar has set, the inoculations are made well into the depth of the medium. The tube is then carefully warmed in the Bunsen burner so as to melt the superficial layer of the agar and seal the inoculation puncture. The upper part of the tube

now heated to expel a portion of the air, and a well-fitting rubber cap is applied while the tube is still hot.

Agar plate cultivations.—Agar plate cultivations, as is well known, are somewhat difficult to make, but by employing the following expedient modified agar plates may be prepared which will answer most purposes. A tube of sterile nutrient agar is melted, poured into a sterilised Petri's dish resting on a level surface, and allowed to set. A suitable dilution of the material to be examined is made in some fluid medium—sterile broth, water, &c. A few drops of this dilution are then poured over the sterile agar plate in the Petri's dish and allowed to run over the surface. The dish is placed in the incubator; the fluid soon evaporates, and the organisms are deposited on the surface of the agar and develop colonies. Several such modified plate cultivations should, of course, be prepared at the same time.

Staining sarcinæ and ascospores.—Professor Crookshank has long made use of the following method for staining sarcinæ, and none answers better. Cover-glasses are prepared in the ordinary way, care being taken to spread the film gently, so as to break up the sarcina formation as little as possible. After drying and fixing, the preparation is stained with Neelsen's solution of fuchsin for two minutes, rinsed in water, and then rinsed in alcohol (methylated spirit) for a few seconds, quickly rinsed in water again, dried, and mounted in Canada balsam. If the alcohol acts for more than a few seconds the whole of the colour will be removed; if for too short a time the divisions between the cells will be indistinct. A little practice is needed to hit off the right point. The same method may be used for staining streptococci and many other bacteria, and is especially indicated when much débris is mixed with the organisms; this is readily decolourised, and clean preparations can be obtained. Sarcinæ may also be stained in a similar manner, substituting Löffler's methylene blue solution for the Neelsen's fuchsin, and staining for fifteen minutes, then rinsing in water, alcohol, &c., as before. Exceedingly beautiful double-stained preparations of the ascospores of yeasts may be obtained by the following method. Cover glasses are prepared in the ordinary way and are stained with Neelsen's solution of fuchsin for two minutes, rinsed in water, decolourised in alcohol for half to one minute, until the spores only remain coloured, then rinsed in water, counter-stained with Löffler's blue for five minutes, washed, dried, and mounted in Canada balsam. The spores are stained red, the unaltered cells, &c., blue.

Staining actinomyces.—The Ehrlich-Biondi reagent is an admirable stain for sections of actinomycosis. The best results have been obtained by staining in the solution for about half an hour, decolourising in alcohol for some time until the sections become brownish, and then clearing and mounting. Bovine actinomycosis thus treated shows the "clubs" stained brown and sometimes a "mycelial" network, within the ring of clubs, stained green. With this stain the clubs could be readily demonstrated in sections of human actinomycosis, in which Gram's method failed to show them.

Examination of air.—Recently, for the bacteriological examination of air, Sedgwick's method has been made use of, and it seems to be the best of the many methods which have been suggested for this purpose. A glass tube of special form is employed. (Fig. 2.) This consists of an expanded portion (A B) about 15 cm. long and 4·5 cm. in diameter; one end of this is contracted so as to form a neck (A) 2·5 cm. in diameter and in length; to the other end is fused a glass tube (B D) 15 cm. long and 0·5 cm. in diameter. The neck of the tube is plugged with cotton-wool, and two wool plugs are inserted in the narrow tube, one at its open end (D), the other about 6 to 8 cm. from the wide part (C). The whole is then sterilised. When cool, the narrow part of the tube, from its origin at the wide part down to the first plug (B C), is filled with powdered cane sugar (No. 50, B.P. gauge), which has been carefully dried and sterilised at 120° to 130° C. The tube is again sterilised at 120° to 130° for two or three hours, the greatest care being taken not to melt the sugar. After sterilisation the tube is ready for use. The wool plug is removed from the mouth (A), and a measured volume of air is aspirated through the layer of powdered sugar by means of a small hand air-pump, the volume of air being measured by the displacement of water in a flask. Having taken the sample (5-20 litres), the wool plug is replaced in the neck (A). The powdered sugar is then shaken down into the wide part of the tube (A B), and 15 c.c. of melted sterile nutrient gelatine are poured in. The powdered sugar readily dissolves in the melted gelatine, and when solution is complete a roll-culture is made in the tube, just as in Esmarch's method. The tube is then placed in an incubator at 20° C., and the colonies are allowed to develop.

King's College, W.C.

A CASE OF SERO-PURULENT CYST, PROBABLY OF THE RIGHT SEMINAL VESICLE.[1]

BY RAMON GUITÉRAS, M.D.,

INSTRUCTOR IN OPERATIVE SURGERY TO THE NEW YORK POST-GRADUATE MEDICAL SCHOOL, AND SURGEON TO THE NEW YORK CITY, FRENCH, AND COLUMBUS HOSPITALS.

A MAN twenty-four years of age presented himself at the French Hospital, New York City, on March 10th, 1894, complaining of a swelling in the lower abdomen. His previous history was as follows. Since he was twelve years of age, when he was confined to his bed for about one week with a fever, he had always enjoyed good health until last summer, when he was suddenly seized with a severe pain in the abdomen and chest, accompanied by a difficulty in breathing. The attack lasted but a short time, and was evidently due to indigestion. Since then he has had two other attacks of a similar nature. On Feb. 10th, about ten days after his last attack, he noticed a tumour about the size of an orange in the lower part of the abdomen pushing up from behind the pubes. This caused him no inconvenience, and would have been overlooked had it not been for the fact that it continued to increase in size. It grew to be as large as a cocoanut, and then larger, until it had obtained the size of an adult head. It then began to inconvenience him somewhat by giving rise to a heavy dragging feeling. His appetite began to fail, and although the functions of his various organs were intact, and the pressure of the tumour did not interfere with the powers of urination or defecation, he decided, nevertheless, to enter the hospital to see what could be done for him. On examining the tumour externally, inspection revealed a swelling about the size of a Rugby football extending up from, and out of, the pelvis, to a point above the umbilicus, closely resembling in form and outward appearance a gravid uterus in the seventh month of pregnancy. Its walls were very tense on palpation, and had an elastic feel. It was flat on percussion. My impression on first seeing him, as I could at that time obtain no history, the patient being unable to speak any other language than modern Greek, was that he had a largely dilated bladder and was suffering from retention of urine. I accordingly catheterised him, but could draw off only three ounces of urine in all, the tumour remaining the same. I then examined him bimanually—that is, with the finger of one hand in the rectum and the other hand on the abdomen—and found the tumour wedged tightly down into the floor of the pelvis, conforming in shape with the pelvic cavity. The prostate and seminal vesicles could not be made out with any distinctness. A vibration was noticed like the wave transmitted from one side of an abdomen tensely dilated with fluid to the other, or through any other tensely dilated fluid tumour. On the following day he was examined with the cystoscope by Dr. J. R. Hayden and myself, and, while the left ureter secreted normally, the right one could not be brought into view. The tumour was then explored by means of an aspirating needle at several points, and specimens of fluid varying in colour and consistence were withdrawn, some being thin and clear, while others were thick and "pea-soupy." We examined them hastily, and found that they were all highly albuminous and contained pus. It, therefore, seemed probable that we had to do with a multilocular cystic tumour, arising possibly from a floating kidney which had become lodged in the pelvis. Accordingly an operation was decided upon, and on March 15th the patient was etherised, and an incision was made through the abdominal wall in the median line, four and a half inches in length, from the symphysis pubis towards the umbilicus. The abdominal wall having been cut through, we came to a pouch of a greyish-pink colour extending up from the pubis towards the umbilicus, about three and a half inches in length. It was shrivelled and corrugated, though not

[1] Presented before the New York Society of Dermatology and Genito-urinary Surgery, April 15th, 1894.

atrophied, and was not covered by peritoneum. This puzzled us for a moment, but we soon found that it was the empty upper part of the bladder, which was pushed upwards by the tumour and pulled toward the umbilicus by the urachus, which was stretched tightly over the growth. The incision was then increased to eight inches, and the peritoneum from its juncture to the bladder wall was slit up with the scissors, revealing a tumour about twenty-three or twenty-four inches in circumference and having a dirty greyish black wall. The parietal peritoneum was easily shelled away from the tumour wall on either side, rendering further exploration more easy. The growth seemed to spring from out of the pelvis, to have started from the posterior wall of the bladder, and to spread over its posterior and lateral surfaces. It was closely adherent to this viscus at every point, as though growing from it. Above, it was covered by the omentum, which was spread over and adherent to it, although there was no one point thicker than another evidencing the origin of the tumour. Examination of the region about the growth revealed both kidneys as well as the other abdominal organs *in situ* and normal, and the tumour not adherent to any other structures than the bladder and floor of the pelvis below and the omentum above. A trocar was then inserted into the tumour, and quite a large amount of yellowish fluid escaped. It was then removed, and a vertical incision large enough to admit the little finger was made through the tumour wall, when it was noticed that a fine membranous-looking tissue of milky whiteness was presenting itself at the opening. This was seized with the thumb-forceps and drawn out until it could be readily caught with the fingers. The incision was then increased slightly in length, and the mass was withdrawn slowly and with a slight rotary movement. While it was being drawn from the interior of the tumour cavity in this way it resembled a white membranous rope, as if several strands of "tape-worm" were being drawn out twisted together. This rope of membrane, from twelve to fourteen inches in length when floated about in a basin of water, unwound and untangled itself until a membrane was revealed corresponding in shape to the interior of the tumour cavity, which it had evidently lined. It was of a very delicate texture and several lines in thickness. This was followed by a gush of a thick, green fluid, which was syphoned out and caught in glass graduates. As nearly as could be estimated, about three quarts of this fluid escaped. The wall of the tumour was then examined and found to retain its greyish black colour throughout. It was about one-third of an inch in thickness and very friable. Having emptied the tumour of its contents and thoroughly washed out its cavity with a solution of corrosive sublimate (1 in 5000), the question of extirpating its wall was entertained, but as it was so firmly adherent to the bladder and the other important tissues in the floor of the pelvis it was thought best to leave it in place. Accordingly an elliptical piece was cut away from either margin of the vertical incision made down through the middle of the tumour anteriorly, and a gauze drain was inserted into the tumour cavity, the walls of which were stitched together above and below the drain. The skin and the muscular and peritoneal walls on either side were then brought together with deep sutures in the median line, leaving a space for the gauze drain to protrude. The suture immediately above and the one below the drain were passed through the tumour wall to hold it firmly to the abdomen until adhesions had formed. The patient was then placed on a liquid diet, with orders that he be catheterised every six hours, and that the present dressings be allowed to remain on for forty-eight hours. The next day the patient's temperature was 101° F., but went down to normal in two days. After the first forty-eight hours the dressings were changed every twenty-four hours, a fresh gauze drain being inserted into the cavity at each dressing. A yellowish residue drained away, which diminished gradually in amount. The patient's bowels acted, and he passed urine without aid on the third day, since when his functions have been normal. One month after the operation the tumour sinus had closed up, until it was but about an inch in length and a quarter of an inch in diameter. The patient was up and went out daily. The percussion note over the abdomen was normal. Examination per rectum revealed a thickening extending from just above the prostate upwards on to the posterior wall of the bladder, more marked on the right side, and occupying the region of the right seminal vesicle.

No further cystoscopic examination had been made. The membrane and fluid contained in the tumour were examined by the pathologist to the hospital, Dr. G. G. Van Schaick, who made the following report. "The specimens sent me for examination consist of: 1. A fluid of a very pale straw yellow, albuminous after filtration, containing a very heavy sediment, consisting chiefly of white blood cells (pus) with a few fatty granules and a few crystals of cholesterine. No red disks and no hooklets. 2. A membranous substance of a hyaline nature, very poorly supplied with bloodvessels, occasionally showing some flat epithelial cells, mostly deformed and very easily detachable. The structure itself consists of white fibrous tissue interspaced with large areas in which there exist neither cellular nor fibrous elements."

The absence of hooklets in the fluid puts an end to the possibility of the tumour being a hydatid cyst, which would strike one at first as possible, since writers frequently mention it as liable to occur in this locality. The different varieties of fluid obtained by the exploring needle I can only account for either by the needle having found different states of consistence at different depths, or from the fact that the thin fluid, which was near the surface and obtained at the first puncture, was thickened by the patient suddenly moving and changing his position prior to our drawing the second specimen. There are also two other features in the case that are surprising. One is the rapidity in the growth of the tumour before the operation and the rapid atrophy of the wall afterwards; the other is that, notwithstanding the growth, size, and position of the tumour, there was no change in the frequency or the power of urination and defecation. The latter, however, is based on the statement of the patient, who is evidently not of an observing nature and with no fixed habit in attending to the calls of nature.

New York City.

OBSERVATIONS ON ACUTE SUPPURATION OF THE MASTOID CELLS.

BY J. JACKSON CLARKE, M.B. LOND., F.R.C.S. ENG.,
PATHOLOGIST AT ST. MARY'S HOSPITAL; ASSISTANT SURGEON AT THE NORTH-WEST LONDON HOSPITAL.

IN a short paper[1] that I have written I have mentioned that, though the directions given by Barker and Birmingham for opening the antrum mastoideum are sufficient, it is desirable to define more accurately the term "posterior border of the auditory meatus" which is employed in the topographical directions for this operation. In infants there is no definite posterior border, and in adults it is often indistinct. In adults and in many children there is a well-marked ridge, the supra-meatal spine at the upper and posterior part of the meatus. The most prominent part of this ridge is placed vertically above the posterior extremity of the tympanic bone. The latter point is always easily found at every age, and I think it would be of service to define the posterior limit of the outer end of the external auditory meatus as synonymous with this vertical line ending below in the posterior extremity of the tympanic bone. Further, in many children—and I believe in all adults—there is behind and above the supra-meatal ridge a depression perforated by many vascular foramina. This depression probably owes its origin to the development of the antrum, and in over 200 temporal bones of adults and in many of children I have found that through it, in a direction inwards, forwards, and downwards, is the easiest path to the interior of the antrum. In many cases where disease is of old standing and there is extensive necrosis, or where cholesteatomata are present in the tympanum it is preferable to open up both the antrum and the tympanum by gouging away the whole of the posterior wall of the meatus, but in some cases it is, I believe, sufficient to open the antrum. One of the cases on which I have based this opinion I will now briefly relate.

A male child aged two years and three months was brought to the North-West London Hospital. The child had had scarlet fever nine months before and had at intervals complained of earache, but discharge had only been noticed for seven days. Swelling of the ear and marked illness then set in, and the mother took the child to Mr. M. A. Dutch, who sent it immediately to the hospital. On admission there were marked swelling behind the ear and displacement of the pinna outwards and downwards. There was no symptom

[1] Journal of Anatomy and Physiology, vol. xxvii.

pointing to sinus thrombosis, meningitis, or cerebral abscess. On a vertical incision over the fore part of the mastoid being made about two drachms of pus escaped from beneath the periosteum. After freeing the pinna from its posterior attachments I found the supra-meatal spine and the pit behind it were well marked. A little gouging opened the mastoid cells external to the antrum, and more pus escaped; a little more gouging opened the antrum itself at a depth of a quarter of an inch, and pus again escaped. Thanks to the care of Mr. N. F. Kendall, the senior house surgeon, the case terminated in a few weeks without any necrosis taking place; and when the child ceased to attend the aural discharge had almost ceased, there being a perforation of the tympanic membrane about one-eighth of an inch in diameter. I relate the case as an example of the class in which I consider it unnecessary to remove the posterior part of the sulcus tympanicus and to open both the antrum and the tympanum. The case was taken in hand at the very beginning of the complication and before there had been time for necrosis of the mastoid bone to occur.

As a contrast to the above I may mention another case where the parents had not been so well advised as in the former case. A male child aged two had been suffering from an offensive discharge of the right ear for six months when I first saw him. The child was extremely sallow, weak, and emaciated, and the appearance of his head when seen from the front or from behind was grotesque, from a remarkably exaggerated downward and outward displacement of the pinna and puffiness of the surrounding parts. It was evident there had been subperiosteal suppuration, and the odour of the discharge left no doubt that there was extensive necrosis. After making the usual incision I found the whole of the mastoid was loose and required merely to be lifted out. The necrosis had extended as high as the temporal ridge above and had involved the posterior wall of the external auditory meatus in front. Needless to say, the child improved in health rapidly after the operation, and by the aid of bandaging much of the "lopsidedness" of the face was removed. I mention the case as an example of a class of neglected cases where topographical considerations are not called for. I was indebted to my senior colleague, Mr. Frederick Durham, for permission to occupy beds with these two patients.

I may further allude to one other case as bearing on the subject under consideration, although the patient was not originally under my care. A boy aged five years was in the Tottenham Fever Hospital for scarlet fever, and, according to the mother, who did not know the name of the surgeon, two operations on the mastoid were necessary and facial paralysis developed before the first operation was done. Six months later, when he came under my observation, there was a sinus at the back of the right ear. Examination showed that both antrum and tympanum had been well opened up; also there was almost complete right facial paralysis, the face in repose being slightly wasted on the right and distinctly drawn to the left, and there was inability to whistle and to close or open the right eye completely. A year after the onset of the disease the paralysis had improved, so that in repose the face was symmetrical and the boy could whistle and close the right eye &c.; but during movements the left side slightly overpowers the right, even at the present time, one year and three months after the operation. This third case forms an example of a class in which both the antrum and tympanum should be thoroughly opened up, the implication of the facial nerve pointing to a great severity of inflammation and calling for the freest drainage possible.

Old Cavendish-street, W.

THE third annual meeting of the British College of Physical Education was held at Exeter Hall on Saturday, June 30th, the Earl of Meath, President of the College, in the chair. The secretary (Mr. W. J. Welch, jun.) having read the annual report, its adoption was moved by the chairman in a short speech, in which he alluded to the great change that had taken place in public opinion with regard to physical education, making it necessary that teachers should now be well trained. Dr. Savill (chairman of council) said that during the last year the college had very considerably extended its work, the lecture attendances had more than doubled, and the candidates presenting themselves for examination were in the same proportion. The diplomas of membership and licentiateship were then presented by the president, and after a vote of thanks to the chairman the meeting terminated.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ANGIO-NEUROTIC ŒDEMA.

BY W. RAMSAY SMITH, M.B., C.M., B.Sc. EDIN.

IN the *Practitioner* for April of this year I gave an account of angio-neurotic œdema with illustrative cases. In that communication I ventured to state my belief that angio-neurosis was a category in which would be included more than one disease at present in course of being differentiated. The same number of the *Practitioner* contained a notice of a paper by Dr. Solomon Solis-Cohen dealing with "Vaso-motor Ataxia," "a condition of instability of the mechanism of circulation present in certain persons, characterised by abnormal readiness of disturbance, with tardiness of restoration of the equilibrium of the cardio-vascular apparatus." Dr. Solis-Cohen divides vaso-motor ataxia into two varieties: the "relaxing" and the "constrictive," of which exophthalmic goitre and Raynaud's disease are examples respectively. In the *Practitioner* for June, 1894, Dr. Charles P. Noble of Philadelphia, in an article on Profuse Menstruation, touches on this subject of angio-neurosis and states as one of his conclusions that "menorrhagia in young virgins is usually functional, due to disturbance in the vaso-motor system or to relaxation of the tissues." Considering how directly these views bear on the subject of angio-neurosis generally, I think it well to record the latest case of angio-neurotic œdema that has come under my notice, especially as it so closely resembles in many respects the case I described in detail in my contribution to the *Practitioner*.

A domestic servant aged twenty-four consulted me on May 23th of this year on account of swelling of the face, body, and limbs. In general appearance the patient is big-boned and of ruddy complexion; the skin is "harsh"; the hair is what she herself describes as "between colours." She had scarlet fever when five years old. About two years ago she began to suffer from periodical swellings of the whole body. About a year ago she had a "fit," said to be apoplectic. The swellings came on before, but sometimes after menstruation, which occurs fortnightly and lasts only part of the day. There is no leucorrhœa. The swelling may also come on without relation to menstruation; mental excitement and worry will cause it. An attack generally lasts a few days. She says the swelling "would be fearful if she took no medicine to reduce herself." During an attack there is a feeling of heat over the whole body, and itching in parts, especially in the back and in the neck. The whole body swells and becomes red. After an attack there is desquamation, the skin looking like flour. She complains of left-sided headache in the region of the temple and pain shooting into the ear and in the mastoid region and side of the neck. Examination of the mouth shows decayed stumps of premolars and molars in the upper jaw on the left side She sees black spots falling and turning round, and also "silver spots." She cannot eat, and she has a strong inclination to vomit. She has not observed polyuria after an attack. She has a feeling of "pins and needles" in the soles of the feet. She suffers from palpitation, breathlessness, and constipation. I prescribed the following mixture: 120 grains of antipyrine, half an ounce of spirit of chloroform, to six ounces of water; half an ounce to be taken three times a day. On May 31st I saw the patient again. She has not menstruated. The swelling is less. The skin is of its natural colour and is coming off in fine white flakes. She still complains of some pain in the neck and mastoid region. I have advised extraction of the stumps of teeth. She said the medicine made her feel drunk and drowsy; that she had chloroform once rubbed in for toothache, and that she felt "sleepy and queer"; and that recently, when she had "gas" for tooth extraction, she could scarcely be roused from its effects. She also states that about eighteen months ago she consulted a medical man about the swelling, and he declared it was due to pregnancy. She felt much hurt at the insinuation and since then has been patronising druggists and old women in hope of finding something to reduce the swelling. Her list of remedies, domestic and other, was an interesting one.

A comparison of this case with the one I first observed

brings out some remarkable resemblances. Both patients were young women presenting very much the same general appearance; in both cases there was a local cause for a certain amount of local and constitutional disturbances; in both a general attack presented the same features I have already described as characteristic of the disease; in both menstruation and mental excitement were factors in the causation; and both patients exhibited certain well-marked idiosyncrasies to particular drugs. The attacks in both cases were undoubtedly acute, though less severe in the one under notice than in that first described.

Rhyl, North Wales.

A CASE OF OSTEOMA OF THE PELVIS, CAUSING DYSTOCIA.

BY J. M. FINZI, M.D., L.R.C.P. LOND., M.R.C.S. ENG., L.S.A.

Apropos of the case of osteoma of the pelvis recorded by Dr. Wallace in THE LANCET of June 16th, the following case which has just occurred in my practice may be of some interest. On June 16th I was called to see a primipara aged twenty-eight years. On vaginal examination I found a large, smooth, globular swelling of stony hardness, projecting into the right anterior portion of the pelvic cavity and giving exactly the impression that it was the fœtal head. On further examination the fœtal head was found presenting apparently in the left occipito-posterior position, above the brim, the os being about the size of half a crown and the membranes unruptured. Vigorous pains having persisted for about two hours without any advance, I with difficulty applied the axis traction forceps (Milne Murray) and continued attempts at delivery with them for about two hours longer without any effect. I therefore decided to perform craniotomy, which I did with the help of my assistant, Mr. Scudamore, and delivered a full-grown child. Strict antiseptic precautions were adopted throughout, and the mother made an uninterrupted recovery without subsequent rise of temperature. On examining the abdomen on the eleventh day after delivery the tumour could be felt from above encroaching considerably on the cavity of the pelvis and extending from half an inch to the right of the symphysis pubis backwards and downwards in a globular form, and perfectly smooth towards the ischial tuberosity. A history of an injury caused by a fall downstairs about the age of fourteen years was elicited, for which she was treated in hospitals for twelve months in bed, and for which weight extension was used during six months of that time; and, moreover, for three years after that she was unable to put her right foot to the ground or to walk without crutches. Pain along the inner side of the right thigh was a marked feature during labour and had frequently been complained of previously.

Sutherland-avenue, W.

CASE OF IDIOPATHIC TETANUS; RECOVERY.

BY CHARLES EYRE COUNSELLOR, M.D. CALIFORN., L.S.A.,
PHYSICIAN TO THE ESMERALDA COUNTY HOSPITAL, STATE OF NEVADA, U.S.A.

AT 8 P.M. on April 24th, 1893, I was called to see a healthy young miner twenty-eight years of age, of sober habits and strong physique, who had been suddenly attacked by spasms. He had been given an emetic of salt-and-water before my arrival. I found him suffering from tonic spasms, evidently of a tetanic nature. Opisthotonos and trismus were well marked; the pupils were dilated, with a look of horror; there was slight risus sardonicus, and the countenance was congested. I promptly administered chloroform on a towel till relaxation set in, and I then gave one drachm of chloral hydrate with half a drachm of bromide of potassium. The patient complained bitterly of the pain during the paroxysms and said he felt as if a hand of iron was slowly strangling him. During the ensuing paroxysms I applied hot moist sponges to the throat, with good effect. Subsequently (about 10.30 P.M.) he went to sleep, and slept all night. On the next day I found him conscious, but very sore. His complexion was still dusky, and there was great pain in the muscles of his neck. The temperature was 101°F.; the pupils were equal and normal; the skin was moist. He had passed urine freely. He remembered all the details of the attack of the previous evening, and he said that the pain was intense. I gave him fifteen grains of calomel, to be followed in two hours by an ounce of castor oil. The bowels acted freely, black stools being passed. For diet I ordered hot milk only. The paroxysms came on again at noon, and lasted an hour. The symptoms were the same, except that the opisthotonos was replaced by pleurosthotonos. I gave two scruples of chloral hydrate with half a drachm of bromide of potassium, and he slept during the rest of the day, awakening only to micturate and to drink some milk. I repeated the chloral hydrate at bedtime, and again during the night. On the 26th I found that he had passed a good night, but had had slight spasms at 6 A.M. Another dose of the chloral hydrate had sent him to sleep again. I now gave him half an ounce of castor oil, and he passed natural stools. The temperature was normal. I ordered twenty grains of chloral hydrate with twenty grains of bromide of potassium, to be given every time he woke up. On the 27th the patient looked better, having slept well. At 11 A.M. he had strong carpo-pedal contractions, also trismus. I ordered the chloral hydrate to be continued. On the 28th the patient complained of acute frontal neuralgia. I gave him ten grains of bisulphate of quinine, which afforded relief. The bowels acted naturally. He still took the hot milk freely. There were several slight twitchings during the day, but no marked spasms. He continued to take the chloral hydrate and bromide of potassium in fifteen-grain doses. On the 29th the headache had gone, but the muscles of the neck and jaw felt very sore. I ordered him massage with warm olive oil. The appetite improving, I gave chicken and rice broth in addition to the milk. On the 30th the patient felt "first rate." I allowed him to sit up for a little while in a chair. On May 1st he was discharged cured, and he has since resumed his work.

In this case I could find no cause for the attack either from strychnine poisoning or from trauma. A few days before the attack he had taken violent and unaccustomed exercise on the parallel bars in the gymnasium, and on the next day he had felt very stiff in the muscles of his neck and shoulders. The *rationale* of my treatment was simply to keep the patient under the influence of chloral hydrate till the disease wore itself out. In all, he took one ounce of chloral hydrate, commencing with the heroic dose of one drachm. The patient was perfectly conscious during the attacks and suffered acutely. The first symptoms were felt in the muscles of the neck and jaw. I believe I am justified in assuming this to be a case of idiopathic tetanus and not tetany, and also in disregarding strychnine poisoning or hysteria by my knowledge of the patient, his surroundings, and his habits.

Nevada, U.S.A.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

TWO CASES OF CÆSAREAN SECTION.

(Under the care of Dr. HERMAN.)

IN THE LANCET of Dec. 16th and 23rd, 1893, we reported some cases of Cæsarean section performed at the London Hospital by Dr. Herman. Those reports completed the publication of the cases of that operation performed by Dr. Herman up to that date. We now report two more cases since performed in the same hospital.

CASE 1. *Fibroid blocking pelvic cavity; Cæsarean section after twenty hours' labour; living child; death of mother from peritonitis.* (Reported by Dr. David Brown, resident accoucheur, and Mr. H. W. Beedham, clinical clerk.)—A woman thirty-three years of age was admitted to the London Hospital on Jan. 26th, 1894, at 10 P.M. She had had one

child ten years previously, soon after which she became a widow. She was married again two years ago. She believed herself at the full term of pregnancy. When admitted she had been in labour for twenty hours. The membranes had ruptured. The uterus reached to the ensiform cartilage; it was hard. There were no regular pains. The pulse was 90 and the temperature 99° F. Hard lumps could be felt through the abdominal wall. The bladder was full; ten ounces of urine were drawn off, after which the child's head could be felt above the pelvic brim. There was well-marked constriction of the uterus about three inches below the umbilicus. On vaginal examination the anterior lip of the os uteri was felt high up behind the pubes. The pelvic cavity was nearly filled by a large mass continuous with the posterior lip of the cervix, but not having any distinct neck that could be reached. It was evident that delivery was impossible. The size of the mass in the pelvis and the breadth of its upper attachment made it at least very doubtful if it could be removed with safety by the vagina and the patient subsequently delivered. Cæsarean section was therefore decided upon. At 11.55 P.M. the patient was anæsthetised. The abdominal incision was begun at 12.2 A.M. It extended from an inch above the umbilicus to an inch above the symphysis. The uterus was opened by an incision five inches long. Several fibroids were on the anterior wall of the uterus, and one of them, about the size of a hen's egg, was in the line of the incision. The child was extracted living, and then the uterus was pressed out of the abdominal wound. The placenta and membranes were then removed, and the interior of the uterus sponged out with a 1 in 2000 corrosive sublimate solution. A grain of ergotin was injected into the buttock. The uterine wound was then closed with seven deep silk sutures, not including the decidua. The peritoneum was then sutured with a continuous buttonhole catgut suture. During the suturing the uterus was more than once washed with warm water. The suturing was finished at 12.26 A.M. The ovaries and tubes were then removed and the uterus replaced in the abdominal cavity. The peritoneum was not washed out, as it was not thought that any fluid had entered the abdominal cavity. The abdominal incision was closed with seven silk sutures. The operation was finished at 12.37 A.M. The wound was dressed with iodoform and Gamgee tissue. At the end of the operation the pulse was 150. An enema of brandy and beef-tea was given. At 1 A.M. the pulse was 132; at 2 A.M. it was 120. The patient retched a little and the extremities were rather cold. One-tenth of a grain of morphia and one grain of ergotin were given subcutaneously. At 3.15 A.M. the pulse was 94, at 8 A.M. it was 84, and the temperature 98·5°. After this the patient became restless; the pulse and temperature gradually rose, the latter reaching 104·4°. She died on the evening of the 28th, not quite forty-eight hours after the operation. She had no pain, and vomiting ceased some hours before death. The necropsy showed slight peritonitis. The uterine wound was united throughout its length.

CASE 2. *Cancer of cervix uteri blocking pelvis canal; Cæsarean section; recovery of mother; living child.* (Reported by Dr. E. Chichester, resident accoucheur, and Mr. J. Rowland Turner, clinical clerk.)—A woman twenty-nine years of age was admitted into the London Hospital on May 16th, 1894. She had enjoyed good health until her present illness. She first menstruated at the age of twelve; the menses were regular till pregnancy; they were copious, accompanied with pain, but not severe enough for her to lay up. She believed she was eight months' pregnant. For the first three months of her pregnancy there was no hæmorrhage, and she felt well; for the last five months there had been almost daily hæmorrhage from the vagina. She had also had much pain, latterly almost preventing her from walking. For a month she had had pain and difficulty in micturition, and had had to pass urine more often. The bowels were costive and defecation very painful. The uterus reached not quite halfway between the umbilicus and the ensiform cartilage. By the vagina the cervix uteri was found converted into a fixed, hard, ulcerated mass, in places as hard as wood, and so large that no part of the child could be made out through it. Dr. Herman was of opinion that natural delivery through this mass was impossible. This was also the opinion of Dr. Cullingworth (who had seen the patient before admission) and of Dr. Lewers. Delivery by Cæsarean section was, therefore, unconditionally indicated. Dr. Herman thought it better to perform the operation at once, rather than wait for full term, because: 1. The child was living, whereas in pregnancy with cancer going to full term the child often dies in utero. This possibility of intra-uterine death counter-balanced the risk to the child from premature birth. 2. Pregnancy accelerates the growth of uterine cancer; the termination of pregnancy would, therefore, if the patient recovered from the operation retard her disease and prolong her life. If the patient went to term the cachexia would be greater and the hæmorrhage during the operation greater. The operation was therefore performed by Dr. Herman on May 22nd, Dr. Lewers assisting. The abdominal incision was six inches long. The child was extracted by the feet. The uterus was expressed from the abdominal cavity after delivery of the child; the placenta and membranes were peeled off and the uterine cavity was swabbed with a 1 in 2000 sublimate solution. The uterine wound was closed with eleven deep sutures and a continuous buttonhole catgut suture of the peritoneum. It was more than once washed with water while being sutured. The child (a female) was living and weighed 4 lb. The operation lasted twenty-five minutes. The temperature in the evening of the day of operation was 102° F. Next morning it was normal. There was then a gradual irregular rise of temperature until the fifth day, when it reached 103·2°. Then it fell, becoming normal on the seventh day, and never afterwards exceeding 100°. The highest pulse-rate was on the fifth day (120); on the seventh day it had fallen to 80. The febrile symptoms on the fifth day seemed to be due to suppuration about the abdominal wound. The patient left the hospital on June 23rd. There was still a sinus in the wound, which led to the belief that one of the uterine sutures might be keeping it open. The child at the time of discharge weighed 5 lb. 3 oz. The patient's pain was much less than before delivery, and the vaginal discharge was so much less that she only used two pads daily, while before admission she had sometimes used thirty diapers in the day.

Remarks by Dr. HERMAN.—These two cases bring the number of Cæsarean sections performed by me in the London Hospital to eleven; of these, five recovered and six died. All those in whom the necessity for the operation was recognised before labour and the operation was done at a previously appointed time, either before labour had begun or early in the first stage of induced labour, have recovered. This fact emphasises the extreme importance of the early recognition of conditions that make delivery by the vagina impossible, so that the operation may be performed before the patient is exhausted by prolonged labour or other morbid conditions.

BRISTOL GENERAL HOSPITAL.

A CASE OF BRONCHIECTASIS DUE TO IMPACTION OF A FOREIGN BODY IN THE BRONCHUS; PHYSICAL SIGNS OF A LARGE CAVITY; ATTEMPTED DRAINAGE; DEATH UNDER ANÆSTHESIA.

(Under the care of Mr. CHARLES A. MORTON.)

IN THE LANCET of Oct. 15th, 1892, Dr. Sidney Coupland records the case of a young woman who presented physical signs of a cavity in the lung, which Mr. Pearce Gould operated on, but the patient died under the anæsthetic. At the necropsy extensive bronchiectasis was found, and Dr. Coupland remarks: "It is an instructive fact that physical signs of such intensity should have been yielded by a congeries of dilated saccules of irregular shape, the largest of which did not exceed a bean in size." The case which we now record is a very similar one. The lung was riddled with bronchiectatic cavities, and the main bronchus was greatly dilated from the lodgment of a foreign body. The physical signs were those of a large cavity. An attempt was made to drain this cavity and the patient died under the anæsthetic.

A girl nine years of age was seen by Dr. Barclay Baron in consultation at the end of November, 1893, and an abscess in the lung of considerable size was diagnosed. She was, by Dr. Baron's advice, sent into the hospital on Dec. 2nd to have the cavity drained. The history was that nearly three years before she had "swallowed" a metal cap, and was at once attacked by urgent dyspnœa, which, however, quickly ceased and never recurred in an urgent form, though the breathing continued to be a little laboured and was of a whistling character at times. A month after the "swallowing" of the foreign body Dr. Baron examined her larynx and chest and detected that no air entered into the whole of the right lung. Ever since the accident there had been persistent

cough, and at one time she became an in-patient at the infirmary. In August last she began to expectorate pus in such large quantities as almost to choke her at times. Before this there had been no expectoration, but after August it continued, and sometimes in a very short time she would expectorate as much as half a pint of pus. Occasionally this was very offensive. It came up with very slight cough. The patient's father produced a facsimile of the metal cap "swallowed." It was an umbrella-cord ornament, conically shaped, and some half an inch in length in one diameter and a quarter of an inch in the other. It was never found in any of the expectoration. The girl looked well and certainly was not emaciated. The right side of the chest in front was shrunken and flattened, and there was very little movement with inspiration. The heart was beating just inside the right nipple. The right side of the chest below the nipple level, in front, and in the axilla, and below the angle of the scapula behind was absolutely dull, and above this level the resonance was much impaired. Over the higher, more resonant area the breath sounds were cavernous; intensely so just between the scapula and the spine at the level of the spine of the scapula, and only a little less so over the outer part of the right apex and in the upper axilla. As the absolutely dull area was approached the harsh character of the breath sounds diminished, and over the dull area the breath sounds became tubular. Pectoriloquy was intense where the breath sounds were most cavernous; over the absolutely dull area the vocal resonance was only slightly increased. No râles were heard anywhere. The liver and spleen were not enlarged, and the urine was normal. The temperature taken for some days after admission was normal night and morning. She expectorated about half a pint of pus daily, and frequently several ounces came up with one fit of coughing in a few minutes. Sometimes the pus was quite sweet, but at other times it was horribly offensive. On Dec. 7th Mr. Morton made an attempt to drain the abscess cavity. Although the physical signs of cavity were most intense over the back of the lung, yet they were well marked over the upper axilla, which seemed to be the best place to open the cavity. At first she took the chloroform fairly well. The exploring syringe needle was passed upwards and inwards to some depth in the third interspace in the axilla and withdrew several flakes of pus, together with a little frothy blood. The needle was left in, and then Mr. Morton excised an inch of the fourth rib and by means of a very curved cleft palate needle passed a catgut suture through the pleura into the lung beneath and out through the pleura again, and tied it across the pleura. Frothy blood oozed out at the two punctures, showing that it had penetrated the lung. The needle was withdrawn and reinserted in the same direction through the exposed area of pleura and again brought a few drops of pus; it was then withdrawn and a trocar and cannula pushed in the direction taken by the needle through the exposed area of pleura. It went in easily, but nothing came. Mr. Morton withdrew it and inserted sinus forceps, which were opened sufficiently to allow the finger to follow their withdrawal. The finger entered what was evidently the pleural cavity and could indistinctly feel the solid lung beyond. The patient then ceased to breathe, and although artificial respiration was carried on for some time she did not recover. All through the operation she was cyanosed, but the pulse remained good. At one time the cyanosis became very marked, but on stopping the administration of the chloroform and raising the left side of the chest the colour much improved.

At the post-mortem examination on opening the chest there was very little of the right lung to be seen. The heart seemed to occupy the greater part of the right side of the chest, and the great vessels extended close up to the shrivelled-up apex of the lung, so that they would be in rather dangerous proximity to any deep punctures in this area, but there was no sign of puncture, even by the fine exploring syringe needle. The lung was everywhere very firmly adherent, except at the place where the surgeon had attempted to pass the trocar into the lung; here the adhesions were broken down over a small area. So shrunken was the lung that it was found that the pleura had been opened over the middle of its outer surface, though the opening was made high up in the axilla. The suture was found firmly embedded in the lung, having cut through the pleura as the lung was pushed before the point of the trocar. Probably the trocar, instead of penetrating the lung, had pushed it before it, thus separating the adherent pleura over a small area and forming a cavity between the two layers of pleura, which the finger afterwards entered. The trachea and bronchial tubes were full of liquid pus which the girl had been unable to expectorate under the anæsthetic. The right bronchus was much dilated from its junction with the trachea to the most distant parts of the lung. The mucous membrane was only ulcerated just where the bronchus entered the lung, and here it was only a superficial erosion. The lung was fibroid and riddled with small cavities about the size of a pea, due to dilated tubes, and in the uppermost part of the apex there was a smooth walled cavity the size of a walnut, the upper part of the wall of which was only formed of thickened pleura. Near it was the next largest cavity in the lung, about the size of a marble. There was a mass of enlarged bronchial glands at the root of the right lung. The other lung seemed to be hypertrophied, but otherwise it was normal, except for the pus in the tubes. The heart, liver, and kidneys were normal.

Remarks by Mr. MORTON.—The physical signs and symptoms seemed both to Dr. Baron and to me to point to a large abscess cavity at the upper part of the lung, and yet, as in Dr. Coupland's case, they were due to dilated tubes. I do not think the largest cavity we found gave rise to the signs. It was not larger than a walnut, and was situated quite at the apex, whereas the physical signs of cavity were most marked over the dilated bronchial tubes entering the lung, whence I believe they were conducted through the enlarged bronchial glands and solidified lung. The absolutely dull area was evidently the liver, raised from the shrinking of the lung. I believe the foreign body lodged in the main bronchus, as the whole bronchial tube was dilated, and became expectorated with probably the first quantity of pus, which must have been collecting behind in the dilating tubes for some time. The operation would, of course, have done little good had the child survived the anæsthesia, as there was no *large* cavity to drain. The post-mortem examination taught me how near to such a shrunken apex the great vessels may be drawn; and the operation showed how easily the lung stitched to the pleura will tear away when a trocar is introduced, as it pushes the lung in front of it instead of penetrating, thus forming a cavity in the elsewhere adherent pleura. Such a cavity might be mistaken for a surface cavity in the lung itself. It is not necessary in this case to enter into the question of the desirability of preventing air entering between the two surfaces of the pleura during operation, as here it was a matter of preventing also the entrance of fetid pus. It seems to me that the excision of one rib gives too small an area in which to suture the lung to the parietal pleura. There was not room to work at right angles to the ribs. In another case I would suggest the excision of two ribs, so as to give a square area large enough to put in four sutures, forming a square, the puncture being made in the centre. The use of the knife instead of the trocar would be attended with considerable pulmonary hæmorrhage. In cases, such as this one and that under Dr. Coupland's care, of respiratory failure during anæsthesia from filling of the air tubes with pus I would suggest immediate tracheotomy (the edges of the trachea being held open with forceps) and complete inversion of the patient, with aspiration of the bronchi. Tracheotomy alone would be useless.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Special General Meeting.

A SPECIAL general meeting of this society was held on July 9th, the President, Sir WILLIAM DALBY, being in the chair.

The object of the meeting was to consider and confirm the revised edition of the laws as drawn up by the Revision Committee and recommended for adoption by the council.

The proposed alterations, which were unanimously adopted by the meeting, were principally in the direction of codifying and bringing into harmony the various statutes and by-laws which had previously been in force.

In future the ordinary meetings of the society will be held on the second and fourth Mondays in each month from the second Monday in October to the second Monday in May inclusive, the fourth Monday in December excepted. Prior

to the ordinary meetings on the second Monday in October and the second Monday in May general meetings of the Fellows will be held.

The meeting agreed that the revised laws should come at once into effect, with certain provisional exceptions rendered necessary by the assimilation under the revised laws of the sessional and financial years.

The meeting then adjourned.

OBSTETRICAL SOCIETY OF LONDON.

Temperature after Delivery in Relation to the Duration of Labour.—The Change in Size of the Cervical Canal during Menstruation.—Exhibition of Specimens.

A MEETING of this society was held on Wednesday, July 4th, Dr. G. E. HERMAN, President, being in the chair.

A paper was read by Dr. REMFRY on Fœtal Retroflexion, with report of a specimen. He discussed the causes of retroflexion as given by various writers, and divided them into (1) abdominal, (2) dorsal. In (1) the cases were connected with abnormalities in the umbilical cord; in (2) with various abnormalities of the dorsal vertebræ. In the case reported the incompletely developed spine was so bent over that the posterior part of the head nearly touched the crests of the ilia. There was some lateriflexion to the left, and on this side the gluteus maximus was seen to have a distinct origin from the upper portion of the occipital bone. On the right side an encephalocele of about three cubic inches capacity separated the occipital bone from the crest. The presentation was pelvic, and delivery was only effected after prolonged traction, and during this something was felt to give way. It was found that the cord was only two inches long and had ruptured.—Dr. GILES believed that mal-developments of the vertebral column were always secondary to the close application of the abdominal surface of the fœtus to the placental surface. By adopting this view an uniform explanation of retroflexion was obtained.—Dr. AMAND ROUTH thought that the cause of the retroflexion here was the extreme shortness of the cord. He wished to know why the insertion of the gluteus maximus into the left occipital bone was thought to be secondary to the retroflexion.—The PRESIDENT considered that extreme retroflexion of the fœtus might be produced by a very slight cause, as if the fœtus for any reason became so extended that the occipito-spinal or any spinal joint became in front of the line along which the pressure of the uterine walls on the two ends of the fœtus was exerted, then this pressure would tend to more and more retroflex—that is, extend—the fœtus. This explained the great amount of extension in face presentations, and Dr. Remfry's specimen was in the attitude of a fœtus presenting with the face.—In reply, Dr. REMFRY said he did not entirely agree with Dr. Giles in his explanation. In answer to Dr. Amand Routh's question the explanation depended on the fact that the latissimus dorsi and the gluteus maximus were both parts of a primitive sheet of muscle, and in the present specimen the ordinary relations had become displaced in consequence of the retroflexion.

Dr. ARTHUR E. GILES read a paper upon the Temperature after Delivery in relation to the Duration of Labour, in which he analysed 600 cases of normal labour from the point of view of the relation of the temperature after delivery to the characters of the labour. He came to the following conclusions: 1. That the average rise of temperature due to labour is slight. 2. That the length of the first stage of labour bears a slight relation to the subsequent temperature. 3. That the length of the second stage has a direct influence on the temperature, which rises in proportion to the length of this stage. 4. That the time of day at which delivery takes place has very little influence on the temperature; this was, however, highest in the groups of cases where delivery occurred between 12 and 4 A.M., and between 4 and 8 P.M. 5. That when chloroform is given during the second stage of labour the temperature is commonly low after delivery, even if the second stage last long. The average temperature in fifteen cases with a second stage averaging two hours and forty minutes was 98·7° F. 6. That a similar result follows the application of forceps under chloroform; in twenty-six cases with a second stage lasting, on an average, three and a half hours the average temperature was 98·8°. 7. In twelve cases of natural delivery in which the second stage lasted, on an average, thirty-five minutes, but where an intra-uterine douche was given, the average temperature afterwards was 99·4°. Dr. Giles exhibited tables and charts in support of his conclusions.—Dr. CULLINGWORTH suggested a slight alteration in the title of the paper. He was glad to find that chloroform exercised no prejudicial influence upon the post-partum temperature.—The PRESIDENT said that this paper of Dr. Giles was the first attempt to reduce to law the minor temperature variations of the normal lying-in. These variations, although they might be in the present state of knowledge unimportant, because not leading to inferences useful in the management of the case, yet could not be fortuitous.

The PRESIDENT read a paper on the Change in Size of the Cervical Canal during Menstruation. He referred to the different opinions that have been expressed as to the state of the uterine canal during menstruation, some saying that the canal is made smaller by the swelling of its mucous membrane, others that it dilates, but all of these opinions being based mostly on theory and little on observation. He detailed measurements made to ascertain what change really occurs in the cervical canal during menstruation, and came to the following conclusions. 1. That slight spontaneous dilatation of the cervical canal takes place during menstruation. 2. That this dilatation is at its maximum on the third and fourth days of menstruation. 3. That this dilatation takes places in those who menstruate with pain as well as in those who menstruate without, in those who menstruate scantily as well as in those who menstruate copiously, and there is no marked concomitant variation between the amount of dilatation and the amount of pain or the amount of the flow.—Dr. CULLINGWORTH was surprised to hear that the effects of artificial dilatation were lasting enough to vitiate observations made on the following day. It was usually supposed that the effects passed off much earlier.—Dr. GILES asked whether the observations referred to the cervix only or whether the bougies were passed to the fundus. (The PRESIDENT signified the latter.) In that case it was interesting that the maximum dilatation was found on the same days of menstruation (third and fourth) as those on which desquamation occurred in the uteri of monkeys observed by Mr. Heape. The dilatation might thus be partly anatomical. The dilatation of the first day was probably functional.—Dr. C. H. F. ROUTH said that it had always been known that the uterus dilated during menstruation, but he knew of nothing so precise as the statements of the President. It was possible to pass a probe through the cervix during menstruation in cases where this could not be done in the interval. Again, they were conversant with the fact that in certain cases of dysmenorrhœa the pain was due to spasm of the uterus and sometimes to a flexion which had to be overcome. The pain usually ceased on the second to the fourth day, and this might explain the gradual dilatation of the uterine canal at this period, although preceded by a contraction. Another cause for the diminution in size of the uterine canal consisted in the swelling of the walls caused by the congestion occurring prior to menstruation.—The PRESIDENT said that his measurements were of the cervical canal, but the os internum was the narrowest part of this. He could draw no distinction between the functional and the anatomical os uteri. Menstruation seemed to him like a miniature labour; as the cervix dilated in labour so it did in menstruation. Dr. Routh's observation as to a pinhole os admitting a sound during menstruation, but not at any other time, was valuable. He had not been able to find any publication to this effect.

A demonstration of microscopic specimens illustrating the Anatomy of Menstruation in Semnopithecus Entellus was given by Mr. HEAPE.

Dr. STEVENS (for Dr. HORROCKS) exhibited the following specimen: Fibroma of Uterus undergoing Degeneration.

KIDDERMINSTER MEDICAL SOCIETY.

Exhibition of Cases.

A MEETING of this society was held on June 29th, Mr. S. STRETTON, President, in the chair.—Mr. J. L. STRETTON introduced the following cases. 1. A female child aged two years and a half, who had had Discharge from her Ears since Birth. Two days previously the mother had noticed a hard substance at the orifice of the right ear, which was removed by Mr. J. L. Stretton and proved to be a

piece of necrosed bone about the size of a threepenny piece. Two smaller pieces were removed by syringing. Examination of the meatus showed it to be full of granulation tissue, and a probe touched bare bone posteriorly. The left tympanum was perforated. The child had not exhibited any symptoms to indicate mischief capable of producing such destructive changes. 2. A male patient, aged fifteen years, who was admitted suffering from extensive Glandular Enlargements along the Anterior Borders of the Sterno-mastoid Muscles. There was a history of phthisis, and, as treatment by arsenic and thyroid extract failed, they were removed, a large dissection being necessary to free them. The report of the section, which was exhibited, showed it to be a rapidly growing lympho-sarcoma. The wounds healed without difficulty, and no glands could be discovered. Mr. Stretton emphasised the importance of a very free removal in all such cases of glandular enlargement, on account of the impossibility of being certain of their pathological structure. 3. A boy with Fractured Clavicle, in whom great displacement had been rectified by treatment in the supine position. The clavicle was fractured at the outer third, with the inner fragment sticking upwards nearly through the skin, and the outer pointing downwards. It being impossible to rectify this by any of the ordinary methods of treatment, he was admitted and kept in bed in a supine position; the fragments were then easily adjusted, and good union with little deformity followed. 4. A female patient who had been admitted to the Kidderminster Infirmary while freely desquamating on the soles of both feet. This case led to a general debate on the value of desquamation as a diagnostic sign of scarlet fever.

Dr. EVANS showed a boy who had suffered from In-growing Toenail, which had been treated by the excision of a semilunar portion of the flesh below the nail, extending from the root of the nail round to the front of the tip of the toe, and about one-eighth of an inch from the margin of the nail. The portion removed was about a quarter of an inch in breadth at the skin surface, and the edges of the wound thus made were brought together by two or three points of chromicised catgut sutures. Rapid healing followed, and the side of the nail projected well over the flesh of the toe. Dr. Evans also submitted a case of extreme Hallux Varus of both Feet, together with Hammer-toes. The case was treated by excision of the heads of the metatarsal bones of the great toes, division of ligaments of the other toes, and by splinting, with excellent results.

Mr. ROBINSON showed a specimen of a Kidney, the seat of a Medullary Carcinoma, removed from a man aged seventy-three, who had been ill for eighteen months. The illness commenced with pain in the bladder, which came on when the patient was bending down, followed by discharge of bright clear blood per urethram. This was supposed to come from the bladder, as there was no indication of disease in the region of either kidney. Under treatment the hæmorrhage diminished considerably, but eventually recurred, and shortly afterwards a tumour manifested itself in the region of the left kidney. The patient had no uræmic symptoms, and he passed a fair amount of urine up to the time of his death. The case was interesting from the fact of its earlier symptoms pointing so much more probably to a diseased condition of the bladder than of the kidney.

Mr. W. HODGSON MOORE read a paper on Anthrax.

ROYAL MICROSCOPICAL SOCIETY.—At a meeting of this Society held on June 20th, Mr. A. W. Bennett in the chair, the following specimens were exhibited and a paper read:—Dr. J. E. Talmage described his method for mounting and staining the brine shrimp, Artemia fertilis. Dr. W. H. Dallinger called attention to a stereoscopic photomicrograph of injected muscle which had been presented by Dr. W. C. Borden. Dr. Dallinger also exhibited and described a new form of mechanical stage for the microscope which had been produced by Messrs. Swift. Further remarks were made by the Chairman, Messrs. Comber, Swift, More, and Beck. Mr. J. H. Harvey described a method of mounting opaque objects so that they could be moved in all directions whilst under examination. Mr. T. Comber read a paper on the unreliability of certain characters generally accepted for specific diagnosis in Diatomaceæ. A discussion ensued in which the Chairman, Professor F. J. Bell, and Mr. J. Badcock took part. Professor Bell gave a *résumé* of Mr. F. Chapman's sixth paper on the Foraminifera of the Gault of Folkestone.

Reviews and Notices of Books.

Aero-Therapeutics, or the Treatment of Lung Disease by Climate. By CHARLES THEODORE WILLIAMS, M.A., M.D. Oxon., F.R.C.P. Lond. London and New York: Macmillan and Co. 1894.

IN this interesting volume Dr. C. T. Williams sums up the results of his extensive experience regarding the influence of climate upon disease — especially disease of the pulmonary organs. The work is an attempt "to sketch a scientific system of aero-therapeutics based on the combination of modern meteorology with clinical experience, each element of climate being duly considered in its bearing on health and disease." As the author remarks: "Our knowledge in these departments contains many gaps which increasing experience may, it is to be hoped, gradually fill in." Climatology is, indeed, in its infancy, and from the very nature of the subject—the immense area which it covers, the multitude of workers necessary to afford the required data, and the fluctuating and uncertain character of the data themselves—it may be long before it can take rank with the exact sciences. But much progress is undoubtedly being made, and of that progress the present work affords many proofs. We desire to speak very highly of the manner in which Dr. Williams has discharged the task which he has set before him. Avowedly a sketch and not a systematic or exhaustive work, the present volume deals in a highly interesting and suggestive manner with the main problems of climatology as it relates to pulmonary disease. The merits of the different types of sanatoria and of individual stations are set forth fully and clearly, the evidence given being in nearly all cases that of actual residents and scientific observers, and a constant effort is made to substantiate every statement by actual clinical details. Only those whose practice has lain largely in this department can fully appreciate the difficulties of this latter point. Pulmonary invalids of the migratory class come and go most irregularly, and the difficulty of gauging their progress or regress and of appraising the influence of locality and treatment upon them is well nigh insuperable. The style of the writing is clear and easy with an occasional dash of humour.

Dr. Williams begins by devoting a chapter to the factors and elements of climate. The former he enumerates as follows: latitude, altitude, relative distribution of land and water, ocean currents, influence of mountain ranges, character of the soil, rainfall, and prevailing winds. The latter are five—viz., temperature, hygrometry, atmospheric pressure, wind force, and atmospheric electricity. Passing the different types of climate in review, he considers first the "warm, moist" climate, of which one of the most typical examples is Madeira, and considers that "for the majority of consumptives this sort of climate does more harm than good, but for the catarrhal form of phthisis it is, as my statistics show, a distinct success. Chronic bronchitis with emphysema, bronchial catarrh, pulmonary congestion in elderly persons, unconnected with heart disease, are wonderfully relieved." With this statement we do not altogether agree. The climate of Madeira is unquestionably most effective in bronchitis, and hence it naturally proves relieving to phthisical patients in whom bronchitis is a prominent symptom. Its influence upon the tuberculous process itself is, we think, generally unfavourable. Of "warm, dry" climates, Egypt is naturally taken as a type by the author, and his opinion is that "the climate has a most beneficial influence on phthisis, provided the amount of lung-area attacked is not excessive, and there is no fever." Of the Riviera the author remarks: "The winter climate of the Riviera is clear and bright, with a good deal of wind, but devoid of fog or mist; with a mean

of 8° to 10° higher than that of England, with half the number of rainy days and four or five times the number of bright ones." He gives particulars regarding 210 phthisical patients who passed one or more winters in the Riviera. Of these, 149 were males and 61 females. The average age of the males was 25·53 years and of the females 26·31. Family predisposition was present in 55·6 per cent, and hæmoptysis in 59 per cent. The patients went to various Rivieran stations, and the average length of residence was nine months. The results were as follows:—Cured 6, improved 131, stationary 21, worse 52. First stage cases improved more than cavity cases in the proportion of 41 to 30 per cent., and deteriorated less in the proportion of 43 to 49. Of those in the first stage unilateral cases improved more than bilateral in the proportion of 45 to 27, and right-sided cases progressed better than left-sided. He considers the Riviera climate most suitable in chronic bronchitis and emphysema, chronic pneumonia, with or without bronchiectasis, bronchial-asthma, phthisis, in which inflammatory attacks have been the predisposing cause of the disease; scrofulous phthisis, unilateral first-stage phthisis, and anæmia. He deals at length with the High Altitudes and Southern California, and also reviews the different varieties of climate in Australia.

With regard to sea-voyages, notes are given of 65 phthisical patients who used sea-voyages as a form of climatic treatment, and in summing up his views Dr. Williams says: "Among the forms of phthisis specially benefited by sea-voyages I would place the scrofulous or strumous form first; next the hæmorrhagic type, marked by limited consolidations and large recurrent hæmoptysis; next the chronic unilateral cavity cases, without great local irritation. ..... Cases of early consolidation do not progress so well as in certain other climates, though they do not fare badly."

Two facts stand out in strong relief from the author's experience—viz., that in climatic change we have a remedy of great value in pulmonary disease, and that even in phthisis cure may often be hoped for; and, secondly, that in phthisis our success will be in proportion to the stage of the disease. But we would strongly dissuade our readers from, under any pressure, sanctioning the sending of advanced and utterly hopeless cases of phthisis to distant lands. Such a course causes much useless suffering, and brings climatic treatment into contempt.

A Treatise, Practical and Theoretic, on Cancers and the Cancer Process. By HERBERT SNOW, M.D.Lond., Surgeon to the Cancer Hospital. London: J. and A. Churchill. 1893.

To write a history of malignant new growths which shall thoroughly represent the knowledge at present possessed concerning them must be a task of no little difficulty and magnitude. Such a task has been undertaken by the author of this work. Whilst, however, giving him every credit for the industry which he has evinced, it is impossible to peruse his book without a feeling that it lacks something to give it a standard value. In point of general arrangement and method there is little to be desired, but it is when he seeks for clear and definite exposition of facts that the reader must feel somewhat at a loss. At the same time, he will find in these pages an ample store of facts which have been compiled by the author from reliable sources, and in that respect the work may be of value even if it cannot be granted to have materially advanced pathological knowledge.

The topic of paramount interest regarding the group of neoplasms is, of course, that of their successful treatment. Surgical intervention alone seems to afford the means whereby this end may be attained, but its results are sometimes fraught with disappointment. The conditions of malignancy—namely, liability to recurrence *in loco* and to general dissemination or secondary infection—baffle the surgeon in his efforts at radical extirpation. The practice now generally followed, and emphasised in this book, to remove diseased structures and adjacent lymphatic glands has, we believe, done something towards fulfilling the aims of treatment; but in spite of this the majority of cases operated upon are followed by recurrence. It is not surprising, then, that the "constitutional" theory of malignant disease should have been so long and so influentially supported; yet there can be little doubt of the correctness of the opposite view—namely, that cancer is primarily a local disorder. Dr. Snow does not believe that the cell changes which constitute cancer are initiated by any external or parasitic influence, but at the same time he does not discuss at any length the latter question, concerning which so much is being written at the present day. His view, on the contrary, is that the cells of the body in the part which becomes cancerous undergo a "reversion to the primordial amœbiform condition," and become, as it were, endowed with independent vitality, multiply inordinately, erode tissues, and invade the blood and lymph streams whereby they are carried to distant parts. It is as if in a community where all the individuals have their allotted task, and coöperate for the welfare of the whole body corporate, some of them rebel against the routine of ordered function and proceed to multiply their forces to hamper the work of their law-abiding fellows, to destroy them, and to invade regions hitherto free from such baneful influence. But in the body politic rebellions do not arise without a cause, and in the human microcosm what is it which excites this lawlessness on the part of certain of its constituent cells? There is no answer to this question; and until it is answered, or until a more satisfactory explanation is afforded than references to "perverted nutrition," "inherited tendencies," "parasitic invasion," our knowledge of malignant disease and our adoption of rational measures for its prevention or cure must perforce remain very imperfect.

The main part of this treatise consists of a systematic exposition of the character, seats, and treatment of the various neoplasms which are covered by the general term "cancer." It is matter for regret that the term should be used in this general sense, instead of being limited to the carcinomata, but this is more excusable than the somewhat arbitrary and singular classification of "cancers" which is adopted by Dr. Snow. The nine primary varieties which he enumerates are capable of a far more rational arrangement, even on an anatomical basis. We trust that in preparing a second edition he will bear this in mind, for orderliness and accuracy (so far as accuracy is possible) in classification go far to render conceptions of the nature and relations of the things classified also accurate and clear. The descriptive matter is rich in clinical and pathological examples and does credit to the author's industry; but some of the illustrative drawings appear to be rather crude and will not bear comparison with analogous figures in current pathological textbooks.

Scientific Memoirs by Medical Officers of the Army of India. Edited by Surgeon-Major-General W. R. RICE, M.D., C.S.I., Surgeon-General with the Government of India. Part VIII. 1894. India: Calcutta Office of the Superintendent of Government Printing. 1894.

PART VIII. of these Scientific Memoirs contains the following: The Results of Continued Study of Various Forms of Comma Bacilli occurring in Calcutta, by Brigade-Surgeon-Lieutenant-Colonel D. D. Cunningham, F.R.S., C.I.E.; a Description of two new species of Cinchona, by Brigade-Surgeon-Lieutenant-Colonel George King, M.B., F.R.S., C.I.E.; and Remarks on the Morphology of the Lumbar, Sacral, and Caudal Regions of the Panjabi, by Surgeon-Captain R. Havelock Charles, M.D., M.Ch., F.R.C.S.I., F.Z.S. With regard to the first contribution, which is, like

the other papers, well illustrated, we may say that whatever view may be attached to the conclusions drawn by its author, there can be no difference of opinion as to the ample opportunities which he has had of studying the subject, or as to the care, patience, and scientific accuracy evinced in the bacteriological investigations and observations he has set forth. The biological, morphological, and physiological varieties, properties, and modifications of the "commas" associated with choleraic diseases in Calcutta have for a long time formed the subject of the author's close study. We have already given a brief summary of the results of Brigade-Surgeon-Lieutenant-Colonel D. D. Cunningham's observations and experiments. He says that cholera in Calcutta is not invariably characterised by the presence of any cultivable comma bacilli in the intestinal contents, and that, even in those cases where such organisms are present, they by no means invariably give the characters of those described by Koch and ordinarily accepted as true choleraic bacilli, but differ greatly in different instances both as regards their morphological and physiological properties. The description of the bacteriological work done in Calcutta is followed by several pages devoted to considering what may be termed the natural history of cholera in relation to different theories that have been put forward in regard to it. This strikes us as being uncommonly well done. The author is disposed to adopt a modification of Professor von Pettenkofer's theory as to the causation of cholera. This portion of the paper or essay is logically and closely reasoned, and it sets forth a number of facts in regard to cholera which unquestionably have to be met and accounted for. We strongly advise all interested in this subject to read what Brigade-Surgeon-Lieutenant-Colonel D. D. Cunningham has to say on it. The two remaining papers included in the Scientific Memoirs are likewise interesting and well worth reading; that by Professor Charles, descriptive of observations made in the anatomical department of the Lahore Medical College in regard to certain features presented in the lumbar vertebræ, cæcum, and coccyx of Panjabis as distinguished from the ordinary European type, is both curious and instructive. The author gives a *résumé* at page 79 of the Memoirs of the changes and modifications in structure frequently found in Panjabi skeletons.

Micro-organisms in Water; their Significance, Identification, and Removal, together with an Account of the Bacteriological Methods employed in their Investigation. Specially designed for the use of those connected with the Sanitary Aspects of Water-supply. By PERCY FRANKLAND, Ph.D., B.Sc. Lond., F.R.S., and Mrs. PERCY FRANKLAND. London: Longmans, Green, and Co. 1894.

FOR some time it has been the despair of medical officers of health and of others who take an interest in our water-supplies that it has only been by careful search through a wilderness of literature that any accurate information concerning micro-organisms in water could be obtained. Some attempts have been made by foreign workers, especially by Tieman and Gärtner, to bring to a focus the more important observations recorded by different investigators, but up to the present there has been nothing of the kind in our English literature. In order to convey any idea of the importance of Professor and Mrs. Frankland's work it would be necessary to give a long list of the subjects of which they treat, and then to review in some detail many of the subdivisions under the different headings, and this in the space at command is out of the question. After dealing with the methods adapted for use in the examination of water for bacteria, the authors describe the bacterial contents of various waters. It is evident that this is no mere compilation, as many of the enumerations given are drawn from observations made by one of the authors. One of the most important chapters in the book is that devoted to the methods of purification of water for drinking purposes, in which the influence of sedimentation during the storage of water in reservoirs, the purification by sand filtration and the influence of the thickness of the sand used in the filter beds, the rate of filtration, and the renewal of the filter beds are all described. The filters used for domestic purposes, and the other means adopted for the purification of water, such as agitation with solid particles and subsequent subsidence, are then gone into and fairly exhaustively treated. The other chapters are devoted to the question of the multiplication of micro-organisms in water and the conditions governing or modifying such multiplication, and to the detection of pathogenic bacteria in water, in which the various methods for detecting the typhoid bacillus are given. From a careful consideration of what is here set forth it is evident, in spite of what the authors claim, that few, if any, are at all satisfactory—a remark which does not apply to the various methods described for the detection and separation of Koch's comma bacillus in and from water. The method of detecting anthrax spores in water has certainly not the merit of novelty, though it is undoubtedly a good one—so good indeed that it has been in use since about 1889, even if we may not consider that practically identical methods were used before that date. As regards the method given in a note on page 285, the authors have been somewhat too confiding, as we feel convinced that if they had tried Schild's method they would have been considerably disappointed with the results. The chapters dealing with the vitality of particular pathogenic bacteria in different waters and the action of light on micro-organisms in water and culture media are both full and interesting, and should be read with interest by others than those who are specially concerned in the study of micro-organisms in water. The subject of the effect of sunlight on organisms which are placed in water is very impartially discussed, though some of the conclusions as to the action of sunlight on organisms at different depths from the surface of the water appear to us to be based on very insufficient data.

Taking the book as a whole, we may describe it in the somewhat hackneyed phrase that "it supplies a long-felt want." The authors have embodied the results of much of their own work, some of it important, some comparatively unimportant, and have gathered from other sources much that should prove of the greatest interest and profit to those who cannot engage in the practical examination of water for micro-organisms; whilst to those who wish to gain a practical knowledge of the subject and to study the literature it should prove of inestimable value. The authors are to be congratulated on having seized, and having made such use of, a good opportunity. In the appendix are given a list and a short description of the various micro-organisms that have been met with in water.

Notes on Anæsthetics in Dental Surgery. By A. S. UNDERWOOD, M.R.C.S., L.D.S., and C. CARTER BRAINE, F.R.C.S. Second Edition. London: C. Ash and Sons. 1893.

THE edition before us—the second—is stated to be expressly intended for dental students, being, as the title describes it, "Notes." It contains some new matter and several fresh illustrations. Mr. Carter Braine appears as collaborator, being, it would appear, responsible for the anæsthetic side of the book, while Mr. Underwood looks after the dental aspect. The plan of employing oxygen or air mixed with nitrous oxide or given alternately with it finds a place in the present edition. Much of the material is based upon the teaching of Mr. Woodhouse Braine, whose writings are largely laid under contribution. The authors do not appear to have given up the view that chloroform possesses powerful depressing action upon the heart, for they deprecate its use when the patient is in the sitting posture. In succeeding editions this section and that dealing with the

physiology of anæsthesia may be made more clear, as the matters therein handled are not so luminously treated as are other portions of the book. In "Notes" such as these it is natural to find some matters left out which should have been included, nor could the authors be expected within so narrow a compass to compress so wide a subject as that with which they have essayed to deal. It is, however, a pity that they have not explained more clearly and succinctly the way in which nitrous oxide produces anæsthesia, and so emphasised its extreme safety in dental and minor operations. Less important matters receive a larger share of attention. The useful little book still needs some revision. The dual alliance of Mr. Underwood—who writes as a surgeon and as a dentist—with Mr. Braine—who speaks as an expert—has undoubtedly resulted in producing a serviceable manual for dental students.

Nature's Hygiene. By C. T. KINGZETT, F.I.C., F.C.S., Past Vice-President, Society of Public Analysts, &c. London: Baillière, Tindall, and Cox. Fourth edition. 1894.

IN preparing a fourth edition of this work, besides a careful revision of the last edition, the author has added chapters on Phagocytosis and Immunity, and on Alimentation and Foods, and has embodied in the text the results of his further investigations of the chemistry of the aerial oxidation of turpentines and other essential oils. It is claimed for this volume that it has "gradually grown from a series of scientific essays into a systematic treatise on hygiene." We take it that most authors, in putting forward a "systematic treatise on hygiene," would have had something to say on the methods and appliances in use for ventilation; on the means of removal of excreta and refuse matters from a house; on lighting and warming; on the distribution and storage of water; on clothing, and such-like matters—but on all these topics the writer is silent. Mr. Kingzett writes as a chemist and has handled his subject mainly from a chemical standpoint; he, therefore, is principally concerned with important chemical processes which are constantly going on in nature—e.g., oxidation, nitrification, fermentation, putrefaction, the life-history of micro-organisms and the influence of these on the preservation of health, and the incidence of disease. On all these matters Mr. Kingzett is thoroughly at home and writes exhaustively and fully. In speaking of typhus fever, however, the author states that this fever may result when the poison finds a home in the intestines. Again, an experiment of Lister is quoted in which it is demonstrated that coagulation of blood does not occur outside the body if care be taken, while collecting it, to exclude the presence of the micro-organisms which are contained in ordinary air. In discussing micro-organisms Mr. Kingzett is, of course, an ardent advocate of the view that their injurious effects are due to the chemical products which they elaborate during their growth in the body, and he is convinced that no further material advancement of knowledge in bacteriology can take place until the chemistry of the subject has been thoroughly explored.

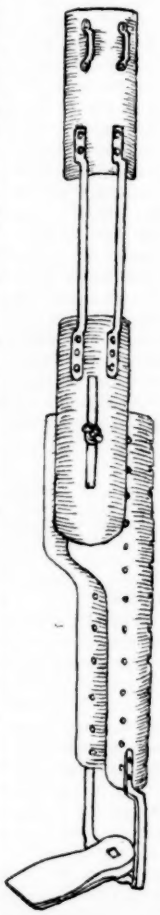
The author describes pus as "a fluid containing a common degraded form of bioplasm or germinal matter, which goes on living and reproducing itself, but which cannot form tissue," and he considers that every kind of bioplasm may by similar degradation give rise to it. We are also told that pus may result from a mucous membrane, from an excessive supply of nutriment to it. For the purpose of disinfecting a room by fumigation Mr. Kingzett recommends either the evaporation of Sanitas oil or the burning of sulphur candles. The concluding chapters of the volume are devoted to a consideration of the essential oils and their atmospheric oxidation in nature, the laboratory, and the factory, in the course of which the method of manufacturing the various Sanitas preparations, of which Mr. Kingzett was the inventor, is described.

New Inventions.

NEW SPLINTS FOR USE IN FRACTURES OF THE LONG BONES OF THE LOWER EXTREMITY, EMBODYING THE PRINCIPLE OF THE EVERTED FOOTPIECE.

THE two splints I am describing have been constructed by me in association with Mr. Arbuthnot Lane. One of them, of which I give an illustration, is a modification of the "long Liston," and is used for fracture of the femur, while the other is suited to fractures of the tibia and fibula and to erosions and excisions of the knee and ankle-joints. Both have been designed with a view to carry out Mr. Lane's views as to the fallacy of the vertical footpiece.[1]

With oblique fractures of both tibia and fibula, when it was apparent that by splinting alone perfect results could not be attained, Mr. Lane has cut down on the site of fracture and united the bones with screws, using subsequently the following splint, consisting of a leg-piece, interruptions, and foot-piece. The leg-piece is a trough of tin with punched-out perforations, and is padded with wool or, preferably, with elephant plaster. It extends upwards to the gluteal fold, and below to within about 5 in. from the sole. The measurement refers to an adult. It is better to perforate the tin trough so as to enable padding to be more securely applied and to give a firm hold to the bandages. The interruptions stand out 2 in. on either side of the splint, to allow of the passage of a roller bandage between limb and bar. At the heel the two interruption bars are joined in such a way that the perforation made in the centre of the joining bar is 2½ in. above the bottom of the tin trough. The wooden footpiece is attached to the joining bar on a pivot, secured by a stout screw, which passes through the footpiece 2½ in. from the posterior edge of the heel. Thus the footpiece, fitting the foot well, has its posterior edge on the same level as the padded trough of the splint, while it rotates right and left about an axis passing along the length of the whole splint 2½ in. above the surface of the trough of the splint. The reason for this will be apparent, for, experimentally, I find that, for lateral rotation through 50° in a trough of this kind, the axis in an adult of moderate stature and development is situated 2⅜ in. from the posterior edge of the heel, and is ⅝ in. external to the centre of the line joining the two malleoli.



The points to be observed in applying this splint are as follows:—1. Mould and pad the trough to fit the leg. 2. Estimate the ordinary rotation outwards of the sound leg in easy supine posture, and adjust the angle of the footpiece to this estimate. Rotate the whole injured limb outwards in the splint till it occupies this position. 3. Fasten the foot firmly by a domet bandage to the footpiece, the bandage being passed beneath the interruptions, and so arranged as not to allow the heel to slip back. Then bandage the leg firmly to the trough. The splint thus arranged gives physiological rest, since the limb is fixed in a position of rotation outwards to the extent which is normal to that individual when lying at rest in the supine position. The angle of this rotation differs somewhat. It is less in the working than in the middle classes, varying inversely with the severity of the

[1] THE LANCET, Aug. 12th, 1893.

labour in which the individual is engaged. The advantages claimed for the splint are as follows: Physiological rest of the limb is attained; each section of the limb is fixed and trouble from pressure is completely avoided; the splint is convenient for wounds, compound fractures, and operations; the same splint may be used for either limb; the apparatus is comparatively inexpensive.

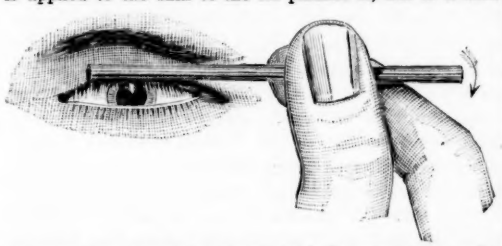
The modified "long Liston" splint (*vide* illustration), for use in cases of fracture and injury of the femur, where rest of the hip-joint is required, consists of an upper and a back splint. The back splint is of similar make to the one described except that the tin trough is enlarged to surround a greater circumference of the femur. To the upper part of this trough the hip-joint splint is attached by a thumbscrew. It is so arranged that the same splint may be adjusted to either limb. The upper, or hip splint, consists of troughed sheet-iron, 4½ in. to 5 in. in width, with interruptions of 10 in., arranged to avoid pressure at the hip. The upper part of the splint reaches into the axilla and is attached to the body by two bands passing round the chest. The lower section overlaps the tin trough of the back splint, and is attached by the thumbscrew mentioned above. The over-riding of these sections, to the extent of 5 in., allows the same splint to be used in individuals of considerable difference in stature and build. The splint after bandaging is very rigid, is comfortable to the patient, and is second only to a "Hodgen" for ease in nursing.

E. A. PETERS.

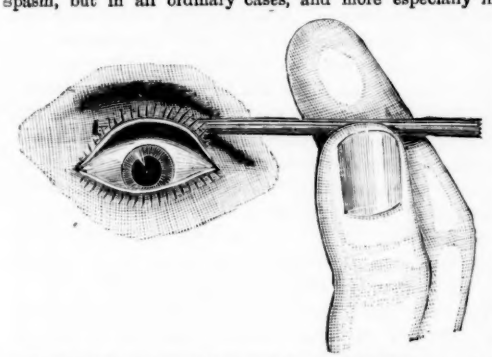
Guy's Hospital.

A PALPEBRAL ELEVATOR.

THE accompanying engravings serve to illustrate a simple instrument for raising the upper lid, which I have found very convenient. It is merely a thin metallic stem, or handle, with longitudinal corrugations. The terminal half-inch or so is applied to the skin of the lid parallel to, and at a little



distance from, the ciliary border; it is then thrust up under the margin of the orbit and at the same time rotated between the finger and thumb in the direction indicated by the arrow, so carrying the eyelid with it. It is not intended for eversion, nor will it conveniently overcome orbicularis spasm, but in all ordinary cases, and more especially in



patients with sunken globes and thin flaccid lids, or when the skin is wet with discharge or smeared with ointment, it is of much convenience and utility. Messrs. Arnold and Sons, of West Smithfield, have made some for me, and supply them at a nominal price.

The Charterhouse. FREDERICK BASS.

THE NIBESTOS FILTER.

IN this filter a novel feature consists in the employment of an asbestos film similar in form and size to the paper filters commonly used in the laboratory. The advantage of such an arrangement is, we think, of an important kind, since the undesirable changes taking place in an accumulated deposit, and its contaminating effects upon the water, may be easily avoided by simply replacing the fouled film with a fresh one. The "nibestos" film, which is an asbestos composition, exhibits very marked filtering powers according to our own practical observations, whilst it admits of regulating to any ordinary degree of pressure, so preventing impurities being forced through or the speed of the filter being retarded. It effects a remarkable improvement in the colour of water when viewed in depths, the foreign brownish colour being eliminated, the blue, natural colour of water only remaining. It is an ingenious and effectual device. The filters we recently inspected were exhibited at Halberstadt-mansions, 126, Charing-cross-road.

A NEW TROCAR AND CANNULA FOR EMPYEMA.

IN cases of empyema, where, after the use of the ordinary trocar and cannula, it may be necessary to enlarge the opening for the introduction of the drainage-tube, a little difficulty sometimes occurs. To obviate this I have devised a trocar

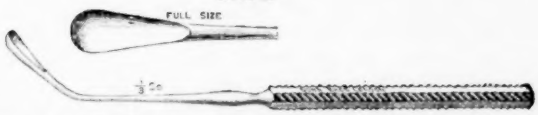
and cannula, with a groove running down one side of the cannula, and a corresponding one on the trocar, so that the opening can easily be enlarged without the risk of the knife slipping. I think the instrument may be used in numerous other instances. The principle might be adapted to the aspirator. The instrument depicted was made for me by Messrs. Ferris and Co. of Bristol.

Flaxton, York. ALFRED KEBBELL, M.R.C.S.Eng.

A MODIFICATION OF VOLKMANN'S SPOON.

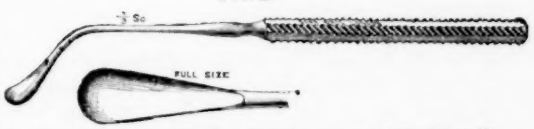
IN operating on the spinal column for Pott's disease, as in many other cases of necrosis of bone, Volkmann's spoons are of inestimable value, particularly where the bone has died chiefly by molecular disintegration, leaving only small sequestra and débris to be dealt with; but in working at the bodies of the vertebra I have found the usefulness of the spoon impaired and restricted by reason of the depth of the carious bone and the straightness of the instrument in its usual form. I have therefore devised and had constructed spoons the terminal two inches of which are set at an angle of 45° with their handles. They are made in two forms, in one of which the cutting edge and concavity of the spoon are directed inwards towards the concavity of the elbow thus

FIG. 1.



formed, and the other outwards towards its convexity. The result is two instruments of considerable power, which enable

FIG. 2.



the operator to scrape either towards or away from himself, so that by their means the whole of an ulcerated cavity can be thoroughly gone over irrespectively of its situation in the vertebral body. The handles are strong and serrated, giving a good grip, and the instruments are made in two sizes, as in the case of the ordinary straight spoons. I am indebted to Messrs. Down for the faithful manner in which they have carried out my idea, and I believe that in these instruments surgeons will find a valuable aid in deep and difficult operations.

J. HOPKINS WALTERS,

Friar-street, Reading. Surgeon to the Royal Berkshire Hospital.

THE LANCET.

LONDON: SATURDAY, JULY 14, 1894.

THE employment of an unqualified assistant is felt to be a much more responsible matter than it used to be fifteen or twenty years ago; and it is customary to blame the General Medical Council for the difference. This, however, is only a superficial view of the matter. The General Medical Council was in no hurry to take any notice of the employment of unqualified assistants. It would be well if medical practitioners who are compelled to work partly through assistants, and who conduct their practice on economical principles, would study the history of this subject as it is contained in the minutes of the General Medical Council. It would be no slight service to general practitioners if the portion of the minutes referring to this question could be published separately and at a nominal cost, so as to be within their easy reach. A very cursory glance at such minutes would show that the subject has been forced on the Council, some times by medical practitioners, sometimes by coroners, and sometimes by Home Secretaries, who, in their turn, have referred to the Council to deal with practitioners who employed unqualified assistants as if they were qualified. Scarcely a volume of the minutes of the Council has been published since 1877 in which this question has not been mooted in one form or another. In that year the attention of the Council was directed to "a remote village" where a man practised as a surgeon, conducting a branch practice and holding a union appointment, "which, though legally held by a certain registered practitioner of six miles out of this district, was in reality conducted for him by an unqualified assistant." In 1878 the attention of the Council was directed to a still more serious case, where orders for extra nourishment and death certificates were signed by the unqualified assistant of a practitioner without the latter ever seeing the cases or knowing anything whatever about them. But the effectual stimulation of the Council came in 1882 in connexion with the case of a practitioner in the East of London who employed a black assistant under whose care several children died. The facts were made the subject of a question to the Home Secretary, Sir WILLIAM HARCOURT, who replied to Mr. H. SAMUELSON in the following words: "Of course there is no legal authority which could deal with the matters referred to by the hon. member. The proper course would be for l i n to call the attention of the Medical Council, which has power to act by the 21 & 22 Vict., to these cases and ask them to put the Act in force against them." This course was adopted, and the practitioner in question was summoned before the Council and found guilty of infamous conduct in a professional respect. He promised to discontinue his objectionable practices in the following words: "I shall not employ another unqualified assistant, except for subordinate duties, unless he be under the direct surveillance of a legally qualified man; and, further, I will not undertake more duties than I can fully and conscientiously perform." The undertaking has, so far as we know, been kept, and it so far satisfied the Council that they did not erase his name, as they might have done, from the Register. The chief reason for this leniency was that they had not hitherto formulated any rule of conduct on the subject. This defect in their duty was remedied in the next year (1883),[1] when they drew up the resolutions which have since been published annually in the medical journals, and for ignorance of which there is now little excuse. We have only recently been asked to define the function that may be permitted to an unqualified assistant. At the recent meeting of the Council several practitioners were removed from the Register for the employment of unqualified assistants in sole charge of responsible cases, and in most such instances the practitioner said that he was not aware of the rules of the Council.

It is not easy absolutely to define the duties that may now be discharged by an unqualified assistant: this definition must be inferred by every practitioner who employs such an assistant. The duties are certainly of a strictly subordinate and modest character, depending but little on the assistants' discretion. It cannot be too clearly apprehended that the whole tendency of legislation, the judgments of the law courts, and the action of the General Medical Council have been to secure that nothing shall be recognised as medical service save what is done by, or at the instigation of, a duly qualified and registered practitioner. The visits of an unqualified assistant, e.g., cannot be legally charged for by his principal. His certificates, whether of death or vaccination, have no validity, and the principal who signs them on the strength of his assistant's services does so at imminent peril of falling out of the ranks of the profession. We would warn every young man against drifting into the position of an unqualified assistant. There has been much natural pity for the men who did so drift in days when there was not such a demand that the public should be attended by only the qualified, and should be clearly informed as to who were qualified and who were not; but this pity is now nearly extinct and will become entirely so. It is impossible that the law shall insist on higher education and stern examinations with one hand and excuse both with the other. This would be unjust alike to the public and to the medical profession. The Executive Committee was asked by the Council in 1887 to consider "under what circumstances a registered practitioner would render himself liable to the censure of the Council in reference to the employment of unqualified assistants," and, referring to its resolutions in 1883,[2] reported that, in its opinion, "a registered medical practitioner would render himself liable to the censure of the Council in case of the employment of an unqualified assistant in the practice of medicine, surgery, or midwifery on behalf and for the benefit of such registered practitioners, either in complete substitution for his own services or under circumstances in which due personal supervision and control are not, or cannot be, exercised by the said registered practitioner." "The Executive Committee, furthermore, takes this opportunity of stating, in reference to the procedure known as

[1] Minutes, vol. xx., page 43.
[2] See Minutes.

'covering,' that in its view a registered practitioner covers an unregistered person when he does, or assists in doing, or is party to, an act which enables such unqualified person to practise as if he were duly qualified." [3] It is only fair to the General Medical Council to say that it has not been harsh in construing its own resolution on this subject; but it seems to have determined not to allow practitioners to do serious and responsible medical work by the agency of unqualified persons.

MANY of the foreign members of the Congress at Rome must have interested themselves regarding malaria and the various attempts that have been and are being made for its prevention. The question is one both of great scientific and theoretical interest, and of vast practical importance to Italy, Greece, Hungary, and other malarious countries. Unfortunately, we have not yet arrived at complete agreement regarding the true nature and cause of the scourge, although the labours of MARCHIAFAVA, CELLI, TOMMASI-CRUDELI, RICHARD, and LAVERAN have shed much light on this difficult subject. MARCHIAFAVA and CELLI are disposed to believe that the cause of paludism is a micrococcus. LAVERAN claims to have discovered the true parasite of palustral blood, which he describes under the following types: (1) spherical bodies, (2) flagella, (3) crescent-shaped bodies, and (4) segmented bodies and rose-shaped bodies. MARCHIAFAVA, however, believes that these forms are nothing but degenerated and pigmented red corpuscles. TOMMASI-CRUDELI and KLEBS take up the position simply that the cause of malaria is a ferment constituted by a living organism which multiplies in the human body and attacks the red corpuscles, causing them to undergo peculiar and characteristic changes. They regard the presence of this ferment in the soil as indispensable for the production of the disease. In order that malaria may arise, three conditions are necessary in addition to the presence of the ferment—viz., a temperature not less than 20° C., a moderate degree of permanent humidity in the soil, and a direct contact of the air with the strata of the earth which contain the ferment. Many false inductions regarding the nature of malaria are attributed to the neglect of one of these necessary concomitant conditions.

LAVERAN alleges many facts which tend to prove that, contrary to prevailing ideas, malaria is often conveyed by water. Thus it has been found that in the same localities, among persons living under the same conditions but drinking water from different sources, some were severely attacked by palustral fever, while others escaped. In certain localities formerly very malarious the provision of a new and wholesome water-supply has sufficed to make the plague disappear. Travellers passing through malarious districts are sometimes found to contract the disease if they drink the local water-supply, but to escape if they refrain from drinking it. All the facts known to us point to the conclusion that the virus of the disease is contained in the soil and water of infected districts; that it is capable of being conveyed by the air, but only to a very limited extent; and that the disease is essentially endemic, never epidemic or pandemic. It was formerly thought that malaria was sometimes brought by the south-west winds from the Pontine Marshes to Rome. This is now known to be an erroneous view. Malaria clings to the soil and is incapable of diffusion to great distances.

As the traveller from the north approaches Rome and touches the fringe of the Agro Romano he notices a novel species of tree, possibly new and unfamiliar to him. This is the Eucalyptus of Australia, which has been extensively planted in Italy, Algeria, and elsewhere, because of its supposed anti-malarious virtues. According to TOMMASI-CRUDELI, these virtues are in the main fabulous, and the undoubted good results which have followed the planting of the eucalyptus are attributable rather to coincident measures of drainage and sanitation than to any remarkable qualities of the gum-tree. Great differences of opinion have existed regarding the influence of forests upon malaria. LANCISI, who believed in the erroneous theory of the conveyance of malaria for long distances through the air, taught that forests hindered this transmission and hence encouraged the preservation and extension of forests. This view is now much discredited. A Commission appointed some years back to inquire into the influence of forests on malaria reported that they could find no evidence that the destruction of forests caused an increase of malaria, but that many facts pointed to a precisely opposite conclusion. The very curious idea once prevailed widely that the planting of large quantities of sunflower would purge the Agro Romano of malaria, that plant being supposed to fulfil the double function of modifying the composition of the ground in some mysterious way and of attracting clouds of birds whose presence was, oddly enough, believed to purify the air. Needless to say, the sunflower doctrine has failed in practice. It was at one time hoped that nothing but thorough cultivation was needful to banish malaria; but in opposition to this view it has been found that the cultivation of a malarious tract almost always caused, for a time at least, an increase of malaria; and, although this increase was in some cases only temporary, it was permanent in others. According to TOMMASI-CRUDELI, "even under favourable conditions neither science nor the practical experience of malaria which we have yet acquired promises any certainty of obtaining a permanent sanitation. The only hygienic benefit which such a change in the cultivation of the Agro Romano can be reckoned on producing is the improvement and maintenance in good order of the hydraulic condition of the tracts placed under close cultivation." We are disposed to think this statement of the case unduly pessimistic. It is hardly possible to ignore the enormous benefits which have resulted from drainage and scientific cultivation in the case of malarious districts in Great Britain, Holland, and elsewhere, and like causes would surely produce like effects in Italy. It is, we think, to the spread of sound principles of farming and the gradual enlightenment and uplifting of the classes engaged in agriculture that the Italian peninsula must look for relief from the grievous burden of malaria.

THAT Dr. ALFRED RUSSEL WALLACE is a very distinguished *savant* no one who knows aught of science will deny. Most naturally, therefore, anti-vaccinationists are very proud of being able to rank him amongst their number and are glad to quot his great name as tending to give

[3] Minutes of the Executive Committee, 1888.

weight and dignity to their cause. He was one of their leading witnesses before the Royal Commission on Vaccination and he is the author of one of their principal pamphlets. In a recent issue of the *Illustrated London News* Mr. ANDREW LANG has an article on Science and Demonology, and we are interested to note the way in which he finds it necessary to write regarding Dr. WALLACE'S opinions on this subject. Mr. LANG writes as follows:—

"Now, Mr. Wallace, in 1875, wrote a little work on 'Miracles and Modern Spiritualism,' where we might expect an application of 'methods of precision' to the theme. But we are sadly disappointed. Mr. Wallace writes (p. 7): 'Lord Orrery and Mr. Valentine Greatrak both informed Dr. Henry More and Mr. Glanvil that, at Lord Conway's house at Ragley, in Ireland (!), a gentleman's butler, in their presence and in broad daylight, rose into the air and floated about the room above their heads. This is related by Glanvil in his "Sadducismus Triumphatus."' I am sorry to contradict a man of science on a matter of easily ascertainable fact, but Mr. Wallace is wrong. Ragley is so far from being 'in Ireland' that Greatrak was brought over from Ireland, at very considerable expense, to heal Lady Conway, in which he failed. The gentleman's butler floated at Lord Orrery's house in Ireland. He had gone out of a Sunday to buy playing-cards, he met the fairies, and it was they who made him float in the air, after Lord Orrery took him in to protect him from the 'good people.' Mr. Wallace states incompletely and very inaccurately facts which we may pardon Professor Huxley for discarding. Now, surely we do expect science, in one of its most distinguished votaries, to tell a plain tale correctly. Mr. Wallace may have read 'Sadducismus Triumphatus,' but in other cases he takes his facts at second hand from Mr. Dale Owen in place of going to the very accessible original authorities. These authorities are infinitely more valuable for his purpose, and Mr. Dale Owen gives a very inadequate summary of their contents. Thus, on his side, science, in the person of Mr. Wallace, has not applied the ordinary historical 'methods of precision.' To a mere looker-on Mr. Wallace seems to exhibit the same unscientific method in another curious question. ..... These methods of precision seem to lack preciseness, which leads to the conclusion that on both sides of this question men of science may be unscientific."

Now, it is a curious fact that, in regard to vaccination, the charges which medical men have made against Dr. WALLACE are exactly parallel to those just quoted. On turning to "Vaccination Vindicated," we find (p. 29) that regarding some important figures, while Dr. WALLACE says that "from this table I have calculated the numbers," Dr. MCVAIL demonstrates not only that no such table exists in the work from which Dr. WALLACE purports to quote, but that, instead, he had got his figures at second hand from an incorrect and misleading pamphlet by another anti-vaccinationist. On another matter (p. 72) Dr. WALLACE was similarly misled by a pamphlet by the late Mr. PETER TAYLOR, M.P., and here also his statements were made "at second hand and without acknowledgment of the sources of his information." Again, in regard to JURIN'S statistics of small-pox mortality in the last century, and in regard, also, to a quotation from a paper by Dr. VERNON of Southport, Dr. WALLACE lays himself open to imputations of the same sort, his dependence here having been placed on Mr. ALEXANDER WHEELER and Mr. WILLIAM WHITE. In the earlier part of his evidence before the Royal Commission Dr. WALLACE laid great stress on accuracy, and referred to the exactness of the scientific methods followed by men like DARWIN and TYNDALL. Later his own extraordinary assumptions and inaccuracies were brought before him so clearly as to make even himself practically admit that "the whole thing was uncertain and valueless" as based on some tables which he had too trustfully relied on. Then, not unnaturally, Sir GUYER HUNTER asked him if he still thought that his data had "the accuracy which a DARWIN or a TYNDALL would regard as requisite." On a return visit which he felt it desirable to pay to the Commission two months later he attempted to excuse his numerous and glaring blunders by saying that he "felt impelled to aid, if ever so little, in obtaining the repeal of a cruel and tyrannical law," and that he "could not wait years to study the question in all its intricacies and obscurities while men were being daily punished, as he believed, unjustly." Perhaps this was making the best of a bad case, and afterwards the organ of the Anti-Vaccination Society grew positively hysterical in its abuse of the Commission for having ventured to ask such questions of such a witness. That, of course, was only to be expected: the whole exposure of Dr. WALLACE'S blunders was set down as discreditable, not to Dr. WALLACE and those who had prompted him to advance such evidence, but to the Commission which had ventured to show how he had been misled.

According to Mr. ANDREW LANG, however, it seems that Dr. WALLACE'S errors are not confined to vaccination, and that in regard to demonology he exhibits the same credulity and "takes his facts at second hand from Mr. DALE OWEN in place of going to the very accessible original authorities." Here surely Dr. WALLACE had no excuse in the way of "a question of politics, a question of personal liberty." The repeal of no oppressive law could possibly be based on the truthfulness of the statement that a gentleman's butler in broad daylight "rose into the air and floated about the room above their heads."

In many respects Dr. WALLACE is a really great man, and we are profoundly sorry that his greatness should have mingled with it such weaknesses as are exhibited in his dealings with subjects like anti-vaccination and demonology. It is an interesting fact that the mental twist which makes men anti-vaccinationists is apt to exhibit itself also in their relations to various other questions; indeed, it would form an interesting study to classify them according to their views generally on religious and social questions. But Dr. WALLACE'S reputation is so great and so thoroughly well deserved that it will long outlast the memory of his weaknesses, much as these are now apt to be in evidence. He will go down to posterity as a most distinguished *savant* whose name will have to be classed not very far below those of DARWIN and SPENCER, while his eccentricities as to anti-vaccination and the like will be buried in a kindly oblivion.

THERE are few more depressing facts in the province of preventive medicine than the great increase of diphtheria in our large towns, notably the metropolis, during recent years. Formerly, having had regard to the especial incidence of the disease on sparsely populated rural districts, where the conditions of life were comparatively primitive, it

was not altogether unreasonable to venture a hope that the regrettable exodus of our rural populations into the towns might at least be accompanied by the consolation of a decreased mortality from diphtheria. Unfortunately, however, time has proved otherwise, and year by year we are confronted with an advancing mortality from this truly terrible disease. In other words, there seems an indication that diphtheria is in some way or other an accompaniment—let us hope not a necessary one—of a higher civilisation, using this term in a sense which includes not only the crowding together of population upon area and the effects of the aggregation of children in schools, but as perhaps embracing those subtle and, as yet, imperfectly understood factors, which may foster the existence and growth of the diphtheritic micro-organism, and tend to produce a condition of the fauces which renders it a suitable culture medium for the operations of the germ. In connexion with the metropolis, Dr. JOHN SYKES has recently presented to the St. Pancras Health Committee an extremely interesting and carefully worked-out report upon the cause of the increased mortality from diphtheria.

Commencing with extracts from the tables in the last annual report of the Registrar-General, Dr. SYKES points out to his committee the manner in which in each of the decennia following the year 1861 there has been in London a marked diminution in the annual mortality from scarlet and enteric fevers, diseases both of which have shown themselves to be amenable to the influence of preventive measures, the former in large part probably by means of isolation, the latter owing to better water supplies and improved drainage arrangements. When, however, the figures in regard to diphtheria are considered, Dr. SYKES draws attention to the fact that, although in the decennium 1871-80 there was, as compared to the previous one, a considerable decrease in the mortality from diphtheria, due, perhaps, partly to the better differentiation between scarlet fever and diphtheria, in the decade 1881-90 the mortality rose to no less than 259 per million living—namely, that in spite of improved drainage and water-supply, and towards the end of the decade isolation and notification, diphtheria has increased instead of diminished. Dr. SYKES furnishes in his report complete tables and charts of the points he deals with, and among the most interesting tables may be mentioned one which gives not only the census population and the annual number of deaths from diphtheria in London since 1861, but also, since 1871, the average number of scholars in the Board and voluntary schools, and from 1889 the number of diphtheria cases admitted into the Metropolitan Asylums Board's hospitals, and the number of cases notified. A study of these figures showsthat from 1861 to 1872 there was, on the whole, a steady decrease in the mortality from diphtheria, but that since that date, with the exception of the years 1876 and 1877, the mortality figures have undergone a progressive and marked increase. These yearly increases, although having what seems to be an obvious relation to the operations of the Education Acts, are in many instances out of all proportion to the yearly increases in population and school attendance. In fact, Dr. SYKES, being unable to explain to his satisfaction the whole increase on a thesis of school influence, made an analysis of the mortality from all throat affections, including diphtheria, since 1881, and the table of figures which he has drawn up in connexion with this analysis must be regarded as the chief feature of his interesting report. The table referred to brings out the fact that the increase in the mortality from diphtheria up to and inclusive of the year 1891 has gone hand-in-hand with a progressive diminution in the mortality from throat diseases other than diphtheria; indeed, the result of these figures, as far as they go, is to suggest that the increase in the mortality from diphtheria between 1881 and 1891 may have been due, in a large degree, to a more complete recognition of the disease and to a transference of fatal throat ailments, which formerly were classed as "croup," "laryngitis," "sore-throat," "quinsy," &c., to "*diphtheria*." Dr. SYKES has included "thrush" in his tables, a disease which, it appears to us, is hardly classable with diphtheria, and in this respect the tables lose some of their value.

Furthermore, we are afraid that Dr. SYKES's figures and conclusions in regard to the compensation of the mortality from diphtheria by a diminished loss from throat diseases other than diphtheria are in no small degree modified when they are considered by the light of the Registrar-General's annual report and summary for 1892 and 1893 respectively. From these documents we learn that in 1892 there were in London some 1962 deaths from diphtheria, while in 1893 the death-roll rose to no less than 3265, and we look in vain for any diminution in diseases of the throat, other than diphtheria, which would account for this enormous rise. In fact, we have still to confess ourselves at a loss to explain the increase of the mortality from diphtheria by any one thesis which has at present been put forward. Doubtless school influence, change of nomenclature, and better diagnosis are all, to some extent, operative, and it may be that to these we shall have subsequently to add the effects of change of type in the disease and to recognise the existence of a cyclical wave. At present our chief hopes as regards control of the disease would seem to be founded on the systematic examination of school children's throats, and the study, for the purposes of controlling them, of those conditions in animals which, as recent investigations indicate, are likely to be related to diphtheria in man.

Annotations.

"Ne quid nimis."

THE ELECTION OF COUNCILLORS AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE result of the election of Councillors at the Royal College of Surgeons of England on Thursday, the 5th inst., may be regarded as satisfactory. The number of votes polled was under 500; 453 voting papers had been sent out, and of these 391 were returned, 383 in time and 8 too late; while 109 Fellows recorded their votes in person. Mr. Howard Marsh, who headed the poll, received 327 votes, including 5 plumpers; Mr. Reginald Harrison 266 votes, including 4 plumpers; Mr. James Hardie 250 votes, including no less than 41 plumpers; Mr. Davies-Colley 215 votes, including 13 plumpers; and Mr. H. W. Page 181 votes, including also 13 plumpers. Mr. Howard Marsh, Mr. Reginald Harrison, and Mr. James Hardie were there-

fore declared duly elected. The success of Mr. James Hardie was due to two main causes: first and foremost to a wave of provincial loyalty and enthusiasm; and, secondly, to the absence of a strong feeling in favour of either of the two unsuccessful candidates. Mr. Hardie's merits, which we cordially recognise, were portrayed in the circular issued on his behalf, and to these we gave full publicity, whilst pointing out that the claim advanced by any particular provincial town to a right of succession to its representation was not tenable, and stating that we preferred candidates whose views were known to be progressive to candidates who had confessedly not paid attention to the collegiate questions of the day, and scarcely considered them to be deserving of any. At the same time we expressed our general sympathy with provincial representation at the College. How far such representation should be carried is not an unimportant question in reference to the efficient transaction of the business of the College. Experience has shown that provincial councillors can manage to arrange for attendance at the monthly Council meetings, but that they are often conspicuous by their absence at meetings of committees. A provincial surgeon in large practice can hardly give up the time to the affairs of the College which his position demands and the interests of the College require, and the Presidency is consequently almost beyond the reach of a provincial Fellow. At the present time there are on the Council of the College six provincial Fellows in a total of twenty-four —a proportion of one-fourth of the Council. In spite of any difficulties such as we have indicated above, we are strongly of opinion that, as a general rule, this proportion should not be lessened. Next year the conditions of the election will be totally altered if the tiresome restrictions on the employment of voting papers at the election of councillors are removed by the sanction of the Secretary of State being given to the proposed alterations in the by-laws of the College. What the effect of this influx is likely to be we are not able to prognosticate. It may possibly bring to the poll a large number of Fellows who regard what are called College politics as "very unimportant." On the other hand, it may awaken fresh interest in the questions now pending and pressing for solution, such as the relations of the Fellows to the Council and the mode of election of the President. These questions were discussed at the meeting of Fellows held after the election on Thursday, the 5th inst., but we defer our comments upon them and the meeting until our next issue.

THE RISK OF INFECTION AT FUNERALS.

THE question raised in the letter of "M.D.," published in THE LANCET of June 30th, deserves more than a passing notice. It cannot be too generally known that the order for the Burial of the Dead in the Prayer Book of the Established Church gives in its second rubric a discretionary power to the priest and clerks to go into the church or towards the grave. At the time this service was composed the plague, or sweating sickness, was well known, as were also small-pox and other infectious diseases. The rapid decomposition of dead bodies at certain seasons of the year after sudden death and under other circumstances was probably also well known, and it may be reasonably presumed that when death had occurred from any infectious disease, or when the body was so much decomposed as to be offensive, the whole of the burial service was said at the graveside, the body not being taken into church at all. The fact that the word "coffin" is not mentioned, the term being "corpse" or "body," confirms this view. In an earlier Prayer Book (that of the reign of James I. of England and VI. of Scotland) the prayer of committal follows immediately after the opening sentences, though the rubric is the same as that previously quoted. Coming from these ancient days to the present time, while it may be invidious for a clergyman to exercise a discretionary power at the risk of wounding the susceptibilities of bereaved relatives who may wish that the body of the deceased shou'd be carried into the church in which he or she worshipped during life, we as medical journalists must insist that such feelings must be subordinated to consideration for the health of the living. The clergyman consulted by "M.D." and alluded to in his letter was perfectly justified in the course he adopted. That the dead body of a person who has died from scarlet fever is a source of infection is too well known to need demonstration, as it has been too often illustrated, and the proper course to pursue is to have the body placed in a perishable coffin with some disinfecting powder and buried in the earth as soon as practicable. The question is one for medical officers of health as well as for clergymen. The dead body of a person who has died from scarlet fever or other infectious disease would not be removed from the house in which the death took place to another dwelling-house—the proposal to do so would be considered almost an outrage on propriety. By a parity of reasoning ought the same body to be removed to a church where people meet weekly or even oftener for public worship? In the case of a cemetery chapel the risk is less as the chapel is only used for funeral services, but still there is some risk. We have no wish to offend religious susceptibilities or to bring upon ourselves the *odium theologicum*, but any clergyman who refuses to allow his church or chapel to be made a focus of infectious disease or the receptacle of noxious effluvia ought to be loyally supported by the medical officer of health for the district as well as by all right-thinking persons.

MR. JUSTICE DAY AND THE "SANITARY OATH."

MR. JUSTICE DAY is a judge well and favourably known as holding the scales of justice impartially, being a terror to evil doers and hardened offenders, but a merciful judge to those brought before him for a first offence and where the circumstances justify leniency. His impromptu remarks are generally distinguished by their strong common sense and forcible reasoning. It is, therefore, all the more to be regretted that he will persist in showing his antipathy to the oath with uplifted hand by making uncalled for remarks when medical witnesses choose to avail themselves of that more cleanly mode of adjuration. Some months ago, while presiding at the Lancaster assizes, he held up to the approval of the jury a medical witness who had kissed the Book, and to their scorn several others who had sworn with uplifted hand, remarking upon the absurdity of supposing that germs of disease could be acquired by kissing a Testament. A writer in the *Solicitors' Journal* asked, somewhat pertinently, by what process of reasoning the learned judge concluded that a Testament conferred immunity from infection? More recently, while presiding at the assizes at Bury St. Edmunds, Mr. Justice Day had to try, *inter alia*, a case of criminal assault, in which Dr. Reginald Roberts of Lowestoft was the medical witness. He expressed a desire to swear with uplifted hand, as he had a legal right to do, and as, we are informed, he has always done for some time past. It was the duty of the official administering the oath at once to administer it to the witness in the form and manner requested. But Mr. Justice Day interposed the remark, his words being written down by a gentleman present in court, "By all means, if you think the New Testament a dangerous book"; and, turning to the jury, he observed, "The gentleman wishes to take the sanitary oath." Dr. Roberts adopted the dignified course of taking no notice of the judge's uncalled for and extremely rude remark, though he might very fairly have answered that, while he did not think a Testament *per se* a

dangerous book, he did think one which had been handled and kissed indiscriminately by a number of witnesses of all sorts and conditions was a dangerous book. Mr. Justice Day's new name for the oath will probably commend it to other witnesses and to jurors, who must naturally prefer a sanitary oath to one which presumably is insanitary. This objection to kissing the Book is not a thing of yesterday, but has been frequently referred to in THE LANCET for the last nine years, while for nearly six years past the law has sanctioned what Mr. Justice Day is pleased to term the "sanitary oath" to any person who may wish to take it. We are rapidly approaching what is generally known as the "big gooseberry" season, and if the lay press will, to use an expression of the day, "boom" the "sanitary oath" as they have boomed many a less desirable thing they will confer a great benefit upon jurors and witnesses who, however much they may prefer not to kiss the Book, have not the courage of their convictions and do not wish to appear singular. While thanking Mr. Justice Day for giving us the name "sanitary oath," we may remind him that the same oath possesses other merits to which he would do well to turn his attention. It is the more solemn form of oath, and its language is simpler than that generally used. It is likely to impress witnesses and jurors more solemnly, and especially the first time they take an oath. It is the more ancient form of oath, it cannot be evaded, and it puts all who take it upon an equality. There is only one way of raising the right hand—there are many ways of kissing or pretending to kiss a book. Mr. Justice Day has, in common with other judges, frequently complained of the amount of perjury committed in our courts of law. Perhaps there would be less if the oath were administered, as it is in Scotland, by the learned judge himself—perhaps there will be less when every witness is required to repeat the words of the oath himself or herself. Meanwhile it is satisfactory for us to know, as we do, that neither the medical witnesses in Lancaster nor Dr. Roberts will be deterred from taking the sanitary oath in future, but, with other medical witnesses, will continue to set the example. The Act of 1888 requires the oath to be administered without further question; let us hope that in future it will be administered without any remarks which are uncalled for and impertinent, even though uttered by a learned judge.

PARASITISM, SYMBIOSIS, AND COMMENSALISM.

WHEN one organism lives in or upon another, and feeds at that other's expense, as an unbidden guest without benefiting its host in any way, we call the condition Parasitism. But there are many cases where the two beings form a physiological partnership, and these are generally included under the name Symbiosis. The members of the firm may be both animals, or both plants, or one may be an animal and the other a plant. In some the association is so close that it is exceedingly difficult to determine that they are indeed two beings and not one. For many years, for example, in some radiolarians little yellow bodies had been noticed. They were seen to possess a well-defined nucleus and a cell wall, and they were looked upon at one time as spores, at another as secretory cells; but later it was found that, though the radiolarian might die, yet the yellow bodies would survive and multiply. They were, in fact, minute algæ, and, though they lived in the radiolarian, the host and the guests both prospered; for the host gave off carbonic acid and nitrogenous products, which formed the best food for his guests, the algæ; and these in their turn evolved oxygen, and so supplied one of the chief wants of the radiolarian. Each profited by the association. In other cases the union is much less intimate, and these have been differentiated by name under the term Commensalism. There is a hermit crab, who carries about with him attached to his shell or even to his claw, a sea-anemone. When the crab feeds the anemone shares the feast, and, moreover, enjoys the benefits of free locomotion, though little able to move itself. In its turn it serves to protect the crab by hiding him, and may also aid in killing or numbing his prey; and when the time comes that the crab must seek a new shell, he carefully assists his partner to change his home, also showing how greatly he appreciates the union. To other examples of this sort of partnership we have referred elsewhere this week (p. 103) in an account of the additions which have been made to the museum of the Royal College of Surgeons of England during the past year. An acacia tree finds itself in danger of destruction by ants and other insects, and enlists in its service a tribe of ants, who are not only innocuous, but ready to fight for the plant and keep off its foes. But the ants are true mercenaries, and will not serve without pay, and for them the tree provides food and shelter—hollow appendages (stipules) to live in, and nutrient fluids on which they may feed. Then, when the foes appear, they rush out and drive them off. The allied phenomena of Parasitism, Symbiosis, and Commensalism illustrate in a marked manner the inter-dependence of organisms, and bring home to us in a picturesque manner the fact that few are able to live only for and by themselves, but that it is the common lot by serving others to serve ourselves.

IS CORNWALL TO HAVE ITS COUNTY MEDICAL OFFICER?

WE referred a short time since to the laudable efforts which the Newquay Local Board are making in reference to the appointment of a county medical officer of health, and to the memorandum and resolution on the subject which they had sent round to the several sanitary authorities throughout the county. The resolution has recently been under the consideration of the Bodmin Town Council, and we regret to observe that this body decided that "no action be taken in the matter." We are afraid the members who arrived at this decision must have done so without making themselves familiar with the contents of the excellent memorandum already referred to, which set forth some of the arguments why Cornwall should possess its medical officer of health. It was certainly to be expected that the town council would have taken sufficient interest in the sanitary condition of the county to have expressed a definite opinion on the subject of a county medical officer, and we can only trust that the position they have taken up may be unique, and that no other sanitary authority will be equally indifferent.

A BENEFACTOR OF THE HEALING ART.

HAPPILY for medicine in science and in practice it has never wanted generous patrons to promote its interests. These benefactors have been laymen as often as professional men, thereby attesting on the part of the outside world an appreciation of the healing art sometimes cynically supposed to be peculiar to its practitioners. In the Commendatore Egisto Paolo Fabbri of Florence, who died on the 25th ult., we have a conspicuous exemplar of this enlightened benevolence. A business man who in the great silk industry had amassed a fortune in Tuscany and the United States of America, Signor Fabbri shared the noble "sense of citizenship"—the κοινονημοσύνη of the Emperor Marcus Aurelius—which made his native Florence the "Modern Athens" of mediæval Europe, and which knew no better means of strengthening the body politic than the promotion of public charities, particularly in the care and cure of the sick. To such as he Tuscany owed the institution of the Misericordia and that endowment of research which at Pisa, for one seat of learning, fructified in many a scientific trophy. From time to time in THE LANCET we have signalised the accessions made to medical education and

practice in Florence by Signor Fabbri, among which the place of honour is certainly due to the splendid amphitheatre he gave to the Istituto di Studi Superiori, followed by the laboratory and halls he attached to the surgical clinique and his splendid equipment of the Laboratorio d'Igiene. His belief in the steady advance of medical science, thus attested, was accompanied by a not less assured conviction of the blessings of that science when reduced to practice—a conviction shown in his endowment of hospitals and health resorts, notably his reconstruction of the new asylum for the insane, his seaside "hospices" for rickety, scrofulous, and ailing children, and, above all, his institution of the Guardia Medica Permanente—an organisation which drew largely on the profession, for the relief of the sick poor and the sanitary rehabilitation of Florence. Amid much that is discouraging in modern Italy the production from the loins of her *bourgeoisie* of such a man as Signor Fabbri is equally gratifying and reassuring—an earnest of the continuance of that public spirit and practical benevolence which, when inspired by scientific insight and enthusiasm, contributed to her pre-eminence in the past and is destined to work out her salvation in the future.

INDUCED FITS.

IN the *Western Morning News* of the 2nd inst. a short article appeared dealing with the case of a man who on the evening of June 30th was found in an unconscious condition in a crowded thoroughfare at Devonport and was removed to the Royal Albert Hospital. There, it is said, it was supposed that the man had fractured his skull, and his friends were communicated with on account of his supposed serious condition. He became exceedingly violent during the night, however, and had to be removed to the police station, but not, so it is said, before the medical men had satisfied themselves that the man was subject to fits which he could induce by "pressing a soft spot near the brain." From this somewhat vague statement on the part of our contemporary we infer that there was an absence of bone at some part of the patient's skull, so that the brain was covered by the soft tissues only, thus constituting the "soft spot." We should be glad to have a medical account of the particulars of what seems to be a curious case. It is scarcely likely that simple pressure on such a spot would be sufficient to induce true epileptiform or epileptic attacks without such injury to the brain as would be likely to have some more or less permanent effect. It seems much more likely that the fits were of the hystero-epileptic character; and such a view would be quite compatible with the subsequent violence, which led to his removal to the police-station. He had apparently been taken to the South Devon and East Cornwall Hospital under similar circumstances quite recently, and a comparison of the views of the different medical men who saw the patient on each occasion might tend to elucidate the true nature of what, under any circumstances, is an interesting condition.

BIOLOGICAL STATION ON THE NORTH SEA.

IT has often been regretted that the biological station on the Neapolitan seaboard has no counterpart in North Sea waters. For one thing, the work of German and British students at Naples has each summer to be suspended by the heat, and a sister institution on a less sultry Riviera was desiderated at which the interrupted discipline could be resumed. The want referred to has now been met, and most effectively. On the 23rd ult. there was opened at Drōbatt, on the Christiania Fiord, not far from Christiania, an admirably appointed biological station, modelled, and in many respects an improvement, upon the original one at Naples. The morphology of the *flora* and *fauna pēlagique* of the German Ocean may now be studied under the best auspices; while physiological research in the same field, of a partly chemical but more preponderatingly physiological tenor, can also be conducted under not less favourable conditions. The far extending, deeply indented Norwegian littoral harbours an amount and variety of animal and vegetable life as attractive to the biological student as that of the Mediterranean, and the number and equipment of the seats of learning, not only on the north-eastern and north-western shores of the Continent, but also in the British Isles, will furnish an array of votaries to which the Italian station can offer no parallel. The international element so wisely encouraged in the Neapolitan institution, by which, in return for an annual subsidy, the universities of the world are entitled to avail themselves of its facilities, will also be recognised at the Norwegian station, and henceforth northern and southern students alike can enjoy a reciprocal advantage in exchanging the scene, while maintaining the continuity, of their work.

CASERIO AND HIS PSYCHOLOGICAL TYPE.

FROM Turin we learn that Professor Guglielmo Ferrero, a distinguished member of that medico-psychological school of which Professor Cesare Lombroso is the chief, has undertaken a study of Caserio's mental idiosyncrasy on its intellectual and emotional side, and is now collecting materials with that object. Among these are the young Anarchist's letters, of which a considerable number are in the possession of his family and friends. Not only the contents of this correspondence, but the handwriting itself, will come under Professor Ferrero's analysis, an order from the Procuratore del Re having placed the whole collection at his disposal, to be copied, photographed, or reproduced as may best suit his purpose. Studies of a similar kind have of late years been numerous in Italy, where the controversy as to where criminal responsibility ceases is still a burning one—witness the animated discussions on the theme in the Anthropological Section of the late International Congress in Rome.

MANCHESTER AND THE NOTIFICATION OF MEASLES.

THE large mortality occasioned in the country by measles and whooping-cough is obviously beginning to force itself upon the notice of public authorities other than those directly concerned with public health administration, and this tendency has recently found expression in and around Manchester in the presentation of memorials to the town council from sundry bodies advocating the compulsory notification of measles and whooping-cough. The bodies referred to comprise the Manchester Medico-Ethical Society, the Manchester and Salford Sanitary Association, the committee of the Chorlton-upon-Medlock Dispensary, and the guardians of the Chorlton Union. Broadly speaking, the memorialists consider that by notification the poorer classes would be educated to recognise the gravity of the two diseases in question. The subject of the memorials has been referred to Dr. Niven, who has recently issued an interesting report upon it, in which he confines himself to a consideration of measles, since, as he remarks, the arguments in connexion with this disease are in the main also applicable to whooping-cough. In regard to cost Dr. Niven estimates that, taking the average case mortality at 3 per cent., the annual cost of measles notification alone would exceed £1000, a sum which, he adds, would represent but part of the total expenditure, even if only attempts were made to isolate the cases notified at home. Without discussing the question of hospital isolation he points out that a large amount of work would be suddenly thrown upon the sanitary staff and that either the staff would have to be considerably augmented or

much of the work at present performed neglected. Commenting upon the experience of Edinburgh and Birkenhead, Dr. Niven remarks that probably the isolation of measles in hospital would produce a certain reduction in the fatality-rate, but he doubts if the expense incurred would be justified by the result. He has forwarded a circular letter to several places where notification of measles is or has been in force, and he publishes the replies received in his report. Unfortunately, however, we are not in all cases told what steps these several sanitary authorities took in regard to the certificates which they received. In Sleaford, for instance, where notification was adopted in 1890 and abandoned the same year "because of the expense primarily and the uselessness secondarily," the medical officer of health concluded that it was "absolutely without value." Again, in Swansea measles "was notifiable for three months and abandoned because of the expense and doubts as to its efficacy." We are afraid, as we pointed out in a leading article in THE LANCET of May 26th, that experiences and expressions of opinions such as these are not of much value. Dr. Niven states, in conclusion, the reasons why he feels that at present he is unable to adopt the compulsory notification of measles, and amongst them he points out that the death-rate is highest in the second year of life, and that, owing to its great infectivity, the disease tends to spread among school children before the first cases are recognised. He expresses his great regret that he cannot at present recommend the notification of measles and whooping-cough, but he considers that an effort should be made to control the incidence of the disease in schools and to diffuse a knowledge of the means by which the diseases may be rendered less fatal.

THE DIFFUSION OF SMALL-POX.

THE recorded cases of small-pox in the metropolis last week were nearly double those of the preceding week, having been 23 with 1 death registered—namely, in St. Pancras parish. There have been 12 attacks in Dudley during June, 20 patients being under treatment in the first week of July. A large expenditure has been entailed by the prevalence of the disease in the last nine months in the town. Three cases have developed at Evesham, 2 being in persons having had intimate dealings with tramps. Small-pox has, unhappily, shown serious signs of recrudescence in Walsall, where, after an empty hospital had been rejoiced in for some days, the disease occurred in several persons in the last week in June, with fresh attacks to the number of 8 last week. It was at the same time last year that matters took a serious turn in the town as regards small-pox. Birmingham has a score of cases, a fall from recent records; and other towns not far away invaded last week were Wolverhampton, Worcester, Smethwick, Handsworth, and West Bromwich. Stockport continues to return occurrences of the disease, and Heywood, Rawtenstall, and Preston are among the Lancashire towns attacked last week. Blackburn seems free again, and though Salford had no new case, it had 1 death registered; and Manchester had 11 fresh cases. Yorkshire has been remarkably free from the disease during the past month, Middlesbrough, Dewsbury, and Bradford only having a few cases last week. In Norfolk a tramp who had slept in a common lodging house in North Walsham the previous week, was last week attacked in the Smallburgh Union, and all the children in the workhouse are to be revaccinated. In Edinburgh it is hoped that the disease has been got under, as the cases arising in the last week of June fell to 7, as compared with 25 in the previous two weeks. The hospital in Cowgate will, it is expected, shortly be removed after the agitation which had attended its erection there. In Leith the new cases in the three closing weeks of June were 7, 20, and 13 respectively. Another case of small-pox occurred near Coatbridge last week, as also 1 at Dundee, where there were then 9 patients under treatment, and other 13 persons in the reception house. Dublin has had 16 or 17 cases reported rather recently, the initial case having, it is thought, been introduced by a tramp. Energetic measures are being adopted for coping with the outbreak, which it is hoped is now at an end. Although in its metropolitan area it has remained comparatively free, Essex has in other parts been somewhat heavily hit, the outbreak in the neighbourhood of Maldon being particularly serious. The disease was introduced by a mariner who returned home suffering from the disease. At Langford a labourer died from what at the time was believed to be purpura hæmorrhagica. This occurred on June 19th. Every person who visited this man during his brief illness, the undertaker and his assistant who placed the body in the coffin, and the woman who prepared the corpse, have since been attacked by small-pox. Two of the cases proved rapidly fatal, the disease assuming the hæmorrhagic type before the eruption appeared. As both the urban and rural sanitary authorities were quite unprepared for such an outbreak, the medical officers of health have had a very anxious time. The first 4 cases were isolated in a tent hospital, then two cottages were taken, and, finally, a wooden building capable of accommodating 12 patients was hurriedly run up. Sixteen patients are still under treatment. As nearly every person who has been in contact with any of the sufferers has been revaccinated it is hoped that the epidemic is at an end. On Tuesday last a joint committee appointed by the Maldon town council and the Maldon rural and port sanitary authorities met to consider the feasibility of a scheme for erecting a permanent hospital for the use of the three authorities. It was unanimously decided that combination was desirable, and a sub-committee was appointed to work out the details. It is to be regretted that so many sanitary authorities defer the provision of the means for isolating cases of infectious disease until actual epidemics occur. Such neglect not only causes the sacrifice of many lives, but causes considerable sums of money to be spent in providing temporary hospitals, which would have been much better spent in providing permanent buildings ready for use in any emergency.

SEASONABLE SUGGESTIONS.

DURING last month and that which preceded it the continued prevalence of bleak, March-like weather must have suggested to many the prospect of an autumnal summer. Happily for agriculture the past few weeks have witnessed a genial change, the more agreeable because tempered by cooling breezes and occasional showers of rain. The national register of health has shown a corresponding improvement, particularly with reference to the prevalence of zymotic diseases. Quite recently, indeed, there have been signs of increased activity in the causes of throat and gastro-intestinal disorders, but this fact is, in some ways, almost a natural consequence of dry and sunny weather. It would be remarkable if the dusty refuse of our arid streets were blown about everywhere without alighting at almost every point of its wandering progress on some susceptible mucous surface. In the face of its nondescript character it seems trivial to associate with its all-comprising composition and effects such limiting terms as hay asthma, or even to accuse of producing it any one source—as, for example, the wooden pavement of our streets. A multitude of impurities, now more than usually abundant in the atmosphere, continues to work mischief on throat and stomach. Not even an ordinary diet is safe, and this is a circumstance for the close consideration of intelligent

householders. Meat, fish, milk, fruit, vegetables, each and all perish quickly by putrefaction. It is doubtless to such agencies as these, and to no merely telluric influence, that we must look for the sources of the disorders we have mentioned, and the recognition and suppression of the former can alone furnish the required preventive. Especial care will have to be used, therefore, in the cleansing of roadways, dust-bins, and household premises generally, and in the selection and use of food. Another frequent cause of illness, the sun, must not be forgotten. In these days it cannot well escape remembrance. Nevertheless, its possible effects are apt to be somewhat lightly regarded, for the danger of sunstroke, even in this country, is by no means illusory. The most reliable means of prevention will be found to consist in a plain, not highly nitrogenous, non-alcoholic dietary, and such an appropriate form of headgear as shall afford protection to the neck and occiput, as well as the cranial vault.

THE TAIT FUND.

ON Thursday, the 5th inst., the subscribers to this Fund met at the residence of Dr. Glover, the chairman of the committee. The meeting was representative, and letters were read from Sir Dyce Duckworth, Dr. John Williams, Mr. T. Smith, Mr. Marsh, Mr. Lockwood, and others expressing regret at being unable to attend. Dr. Glover, in the name of the subscribers, presented Dr. Tait with a cheque for £162 19*s.* 3*d.*, which, with £2 19*s.* 9*d.* (expenses for circulars, postage, &c.), made £165 19*s.*, the sum raised. This represents about five-sixths of Dr. Tait's legal expenses. The chairman, while enjoining on all practitioners the duty of becoming members of defence unions, expressed the hope that if such actions should still occur they might always have in the defendant the advantage they had in this case—one whose history and whose character were a sufficient reply to all charges. The interest of the occasion was completed by the presentation, on behalf of Dr. Tait's patients, of a very handsomely illuminated address expressing unabated respect for Dr. Tait and signed by about 200 of his patients The address was presented by Mr. Wm. Muller of Highbury New-park. Dr. Tait made a very graceful and suitable reply. On the resolution of Dr. Woodroffe, seconded by Mr. King, hearty votes of thanks were accorded to the medical press for enabling the public and the profession to judge the merits of the case and for promoting the subscription. With votes of thanks to the treasurer (Mr. Keele), the secretary (Dr. Reid), and the chairman the meeting ended.

THE VIEWING OF BODIES.

ON June 29th Mr. Oliver Pemberton, F.R.C.S., the city coroner for Birmingham, made some very trenchant remarks respecting the compulsory viewing of bodies upon which inquests are about to be held. At present it is obligatory for both coroner and jury to "have the view"—a practice, we think, wholly unnecessary so far as the jury are concerned, and certainly one that is objectionable and often disgusting. Various attempts have been made to induce the Legislature to assent to the law being altered, but for different reasons they have hitherto been abortive. The Bill recently brought in by Captain Grice Hutchinson was withdrawn because the Government were not prepared to accept some of its provisions, the most objectionable, apparently, being that which proposed to do away with the necessity of the coroner as well as the jury viewing the body. We can imagine that in certain cases it would be advisable for the inquest to be taken *super visum corporis*, but certainly in the great majority there could be no need for such a procedure. For our own part, we think that "the view" should not be binding, but that the coroner should have discretionary power in the matter and should be further vested with authority to require the jury to view if he thinks fit. But, rather than run the risk of indefinitely postponing reform, we see no objection to the clause compelling the coroner to view being retained. In some mortuaries provision is made for the bodies being seen through a glass casement, but obviously this plan could not always be ensured. So far as it goes it is salutary, since it tends to diminish the risk of taking and conveying infection, besides securing immunity against, to say the least, unpleasant physical conditions. But it is necessary to go beyond this, for there are strong moral objections against the regulation which compels unwilling and sensitive people to look upon bodies "green in death and festering in a shroud."

WORKING UNDER COMPRESSED AIR.

WE learn that the London County Council is about to appoint a resident medical officer at the Blackwall Tunnel with a view to the better care of the men who are working under compressed air. There is little experience in this country of the effects of compressed air upon apparently healthy persons, but the experience of Scotland and America tends to show that persons who have suffered from rheumatic disease, or who are of large bulk or of a plethoric nature, suffer more than small wiry men; the former appear especially prone to suffer from neuroses, and even death from time to time occurs. The subject is well worthy of further study, and it may be expected that the London County Council will not be slow to make the experience acquired during the construction of the tunnel beneath the Thames available for those who have to undertake similar work in the future. The medical officer, therefore, whom they appoint should be capable of making exact records of the effects of the compressed air on the men in the tunnel, and of adding to the knowledge which will be required for future operations of a like kind.

MORTUARIES.

THE want of proper mortuary accommodation at Stretford and Old Trafford was recently the subject of comment by the coroner and his jury. Dr. Smith complained of the want of conveniences for the making of post-mortem examinations at the former place, and explained that everything he did was open to the gaze of any of the public who might have been in the vicinity of the mortuary. In reference to Old Trafford, the coroner urged that a separate mortuary was necessary in consequence of the growing population due to the construction of the Ship Canal. One of the jury complained of the necessity of holding inquests at a public-house, and it was decided to make representations to the Local Board of the need of improved accommodation. The Public Health (London) Act, 1891, contains provisions which it may be anticipated will be embodied in any future amendment of the Act of 1875. The duty of providing proper courts for the holding of inquests is definitely imposed upon the county council, and that of providing mortuaries upon the several sanitary authorities. Moreover, the county council may require sanitary authorities to provide suitable post-mortem rooms where these are needed, and as a result it may be anticipated that London will be eventually fully equipped for these purposes. The old habit of using public-houses for the holding of inquests and employing makeshifts for mortuary accommodation have tended to bring the important work of the coroner into contempt, and to render difficult, if not impossible, the examination of bodies needed often in the interests of justice, and upon which may depend the lives of human beings.

DR. C. E. PURSLOW has been appointed Ingleby Examiner at Mason College, Birmingham, for the current year.

SOME of the friends of the late Dr. Arthur Hill Hassall are desirous of placing in the large hall of the Royal National Hospital for Consumption, Ventnor, an oil painting of one to whose thought and energy the hospital owes its foundation. Contributions towards this memorial will be received by Dr. Paul, The Terrace, Camberwell; and Mr. Neale F. Horne, Bucklebury, Brandram-road, Lee, S.E., deputy chairman of the hospital.

MR. E. L. HUSSEY, F.R.C.S. Eng., has laid before the mayor and council of the city of Oxford his resignation of his post as coroner for the city, as he can no longer feel confident of such a continuance of health as will allow him to do the duties efficiently without more help from a deputy than he is willing to receive. We regret to see that the gentleman who has been appointed to succeed Mr. Hussey belongs to the legal and not to the medical profession.

MISS FLORENCE NIGHTINGALE has been appointed an Honorary President of the Tropical Section of the International Congress of Hygiene and Demography to be held at Budapest from Sept. 1st to the 9th. We are asked to state that applications for information on the subject of this section, to which a large number of important papers have been promised, should be made to the hon. secretaries at 40, Curzon-street, Mayfair.

DR. ADOLPH HANNOVER, whose death is announced as having taken place at Copenhagen on Saturday last at the age of eighty, enjoyed more than a Danish reputation as physician, chemist, naturalist, and microscopist. He was a late professor of medicine at Copenhagen University, and some of his numerous works have been translated into many languages.

DR. MANIN AMANTE, who saved the soldier Baldi, a victim of the recent bomb explosion at the Chamber of Deputies in Rome, and who afterwards conducted the case to complete recovery, has been nominated Cavaliera della Corona d'Italia, an honour likewise conferred on Dr. Benjamino Vespa, one of the staff of the Santo Spirito Hospital, for services rendered in the Abruzzi during the cholera epidemic of last autumn.

THE Departmental Committee on Inebriates, Vagrants, and Beggars in Scotland held its first meeting in London on Monday last. There were present Sir Charles Cameron, Bart., M.P., Dr. Farquharson, M.P., Colonel McHardy, Sheriff Dove Wilson, Sir Colin Scott Moncrieff, Miss Stevenson, and Dr. J. F. Sutherland.

THE case of Brasyer *v.* Harness and Another has come to a lame and inconclusive termination. Until Colonel Brasyer's counsel has decided what line he will take with reference to the disagreement of the jury with regard to Mr. Harness, we defer further comment.

MR. CHRISTOPHER HEATH will distribute the prizes to the students of the Dental Hospital of London on Thursday next at the Royal Institute Galleries, Princes Hall, Piccadilly, at 8 P.M. The ceremony will be followed by a conversazione.

WE regret to announce the death of Dr. W. J. Little, late Physician to the London Hospital, who died on Saturday last at his residence, Ryarsh, West Malling, at the ripe age of eighty-four.

ASPECTS OF PUBLIC HEALTH IN THE SCANDINAVIAN CAPITALS.

(BY ONE OF OUR SPECIAL COMMISSIONERS.)

I. CHRISTIANIA.

CONSIDERING the extensive trade that exists between Great Britain and Norway—on the part of the latter, indeed, greater with this than with any other country—it is well to try to get an insight into the steps that are being taken in the large cities there to ensure the public health. Norway, too, is becoming every year more and more one of the great playgrounds of Europe, especially during the summer months and consequently numbers of tourists pass through its cities, many remaining in them several days. It might truly be said that often the only unpleasant recollections of the country that those travellers take away with them have reference to the abominable sanitary arrangements to be found in some of the hotels and posting stations. Further, there is always the general interest attaching to the desire to see and note the special conditions that are imposed on public health arrangements by the variations in different countries of climate, geographical position, and the acquired habits and customs of the people.

It must be granted at once that the position of Christiania is unique, and places many obstacles in the way of an efficient carrying out of sanitary requirements. Situated at the head of a narrow fiord, it occupies a triangular area of sloping land where the valley of the river Akers opens out to the sea, between two ridges of pine-covered granite hills. The soil on which the greater part of the city is built is a stiff clay; the surface is very uneven, and in the fiord the rise and fall of the tide does not amount to more than from three to six inches. Add to this the fact that the extreme severity of the winter months (the average temperature during them being about 23° F.) renders the introduction of a trap with a water seal, on which we pin our faith to keep out sewer air, absolutely impossible, and consequently waterclosets do not exist. Here, then, are the conditions most likely to lead to the retention of waste matters in close proximity to the city.

To counterbalance these disadvantages, however, Christiania can offer much. The air from sea, from mountain, and pine woods combines to make the climate healthy and bracing; the town is fairly well provided with open spaces; and without difficulty, by water or land, access can be had to places of public resort, situated amidst romantic scenery, such as the gardens of Bygdo, Holmenkolmen, Frognersaeter, &c. The population of the city at the beginning of 1893 was 161,157. Since 1860 it had more than trebled, a result in a great measure due to the flocking into it of the people from the smaller towns and the rural districts. At first most of the houses were constructed of wood, but it is now only in the oldest part of the town that these are to be seen, a part now rapidly disappearing to make room for three-storeyed brick and stucco buildings after the modern continental style.

WATER-SUPPLY.

The water-supply is drawn almost entirely from two lakes, only ten or twelve miles from the city, known as Maridalsvand and Sognvand. The former is by far the larger and more important supply, and will alone be described. Lake Maridal covers an area of about one and a half square miles and has an average depth of 20 feet. It lies 1000 feet above the sea, surrounded by granite hills and pine woods. Only on its western side is any of the land bordering on it under cultivation. The water is very soft and pleasant to the taste. Neither free nor albuminoid ammonia can be detected in it, and the solid matter is only from one to two grains per gallon; in fact, for all technical and pharmaceutical purposes it can be used in the place of distilled water. Before entering the mains it is simply freed from the solid matter held in suspension, first through a palissade of wooden staves, then through a coarse network of brass wire, and finally through very fine copper wire gauze, with 120 meshes to the square inch. There has been very much discussion lately about this water. As the analysis of Dr. Schmelck, the public analyst, shows, it must be regarded as exceptionally pure chemically; and bacteriologically too it must be so regarded, for except during a short time in spring

his analyses, conducted, after Koch's method, with gelatine plates of a special alkalinity, show an average of only 20 to 60 bacteria per cubic centimetre; but during the melting of the snow for a week or two this number mounts up to some thousands per c.c. As has been mentioned, on the western side of the lake some land is under cultivation, and the manure used on it consists of night-soil taken from the houses of Christiania, so that during the short period of the rapid melting of the snow the possibility of excrementitious matter being swept into the lake over the hard frozen ground is not absolutely excluded. And, indeed, in November, 1888, an epidemic of gastro-enteritis spread through the city, affecting only those drinking this water, to the pollution of which it was attributed. This epidemic is popularly known as the "Maridals disease," just as we speak of the "Welbeck disease." Dr. Schmelck could not attribute it to any special organism, nor has he, indeed, ever detected the bacillus coli communis or any suspicious bacterium in the water. Further, a new railway line is about to be laid to Drontheim, and one of the routes suggested is along the shores of this lake. This, it is feared, will inevitably lead to the erection of villas, manufactories, and increase of population near it. The construction of filter-beds, which naturally suggests itself as a solution of the difficulty, is considered impossible from lack of a suitable site and the expense that would be involved in their maintenance. The Health Office is fully alive to the danger, and there are three proposals before the town council—(1) to buy up the land under cultivation, (2) to compel the owners to use only artificial manure on the land, and (3) to remove the intake to another lake that feeds Lake Maridal and is quite free from the objections urged in the present case. The third of these schemes will probably have to be adopted, as it gives the most certain guarantee as to the absolute purity of the water. Subsidiary reservoirs are placed at various parts of the city, as at St. John's-hill and Kampen, to lessen the pressure on the mains. All the small house pipes are made of iron, or galvanised iron, lead never being used. Owing to the intense cold in winter, all pipes have to be laid at a depth of six feet at least. Mention should be made of an arrangement by which the water in some of the standpipes is allowed to escape automatically through a little hole placed low down in the ground so that the pipes can never freeze. Dr. Holst, Professor of Hygiene, has repeatedly traced outbreaks of typhoid fever to this, the hole allowing the pure water to run out and impure water to run in. The danger only exists in winter, and is greatly diminished, now that it has been recognised, by improvements in construction and vigilant inspection. The average consumption daily in 1892 was twenty-five gallons per head. Payment is usually made in a lump sum, according to the insurance value of the house, or, if by meter, at the rate of about 1½*d.* per 35 cubic feet.

DRAINAGE, ETC.

The drainage of Christiania has never been carried out after any definite plan, with the natural consequence that the drains have been carried by the shortest route into the fiord or into the river Akers. It is, however, important to state that, waterclosets being forbidden, no excreta find their way into the sewers, and the condition, therefore, is not so bad as it might be. The river Akers, as it flows through the town, instead of partaking of the limpid clearness characteristic of most Norwegian streams, looks black and unpleasant, and the stench from it is sometimes atrocious. This condition is principally due to dye-works and other manufactories situated on its banks in the upper portion of the town.

Until quite recently the drain-pipes to carry the slop-water from the houses were laid simply end-to-end with open sockets, a condition that has led to pollution of the soil. The slop water before it enters the sewer is collected in a large tank or pit situated, in the older houses, in the basement. Through defective covers to this tank noxious gases penetrate into the houses, there being, unfortunately, no provision in the building regulation for a layer of six inches of concrete to be laid under the floor to exclude the ground air. The provisions, too, against the entrance of damp into the dwellings are hardly stringent enough. Efforts are being made in all new houses to have this tank placed outside in the yard, which would be a great improvement.

Mention may be made here of the condition of many of the streets in the poorer districts. The builders of the houses are clearly not required to make the roads, as any one can walk through street after street (as, for example, the Vogtsgade and Toftesgade) where the houses, all three-storeyed, have evidently been built some time and are all occupied, but where there is not the faintest pretence at a footway or made road. There are no water traps to the gulleys conveying rainwater to the sewers so that effluvia from them are not infrequently detected. The question of the disposal of the night-soil has given the greatest trouble in Christiania as in so many other places. What is wanted is undoubtedly a carefully carried-out system of frequent pail removals undertaken at the instigation of the city authorities themselves. At present there is no definite system. Of 5700 houses 2500 have cesspits inside them. Many of these receptacles are not impervious; they therefore pollute the ground and render the walls damp. They are cleaned out, too, at irregular intervals. In other 2500 houses the closet and cesspit are outside the house and consequently give less occasion for complaint. In about 400 houses an arrangement exists for carrying off the urine directly to the sewer by a special pipe. Its disadvantages greatly outweigh its advantages. Earth closets are occasionally used.

The point that is perhaps most open to criticism in the arrangements at Christiania is the fact that so much of the work that is ordinarily undertaken by city authorities themselves has been placed here in the hands of private individuals, who contract in this way for the removal of house refuse, the cleansing of cesspits, &c. At present the house owner has to pay the contractor about £3 a year for removing this refuse. Nine companies compete with one another in this matter in the city. Part of the material so collected is converted into *poudrette*, but by far the greater amount is carried out in carts to the country, or conveyed away by railway and sold to the peasants for manure. Before it is so removed it is usually treated with either lime or dried peat. When speaking of *poudrette* it must not be imagined that its manufacture is carried out, as at Rochdale, in revolving cylinders by heat. It is merely allowed to dry in sheds, the arrangements for which in the largest manufactory that I saw at Grorud were of the simplest description. It is sincerely to be hoped that before long the city will undertake this department of municipal hygiene, providing a suitable station with a properly equipped staff under the energetic engineer of the Health Office, Herr Weiser. The work would probably be considerably lightened by the erection of a dust destructor.

MEAT INSPECTION.

It is an interesting fact, and serves to mark off very clearly the difference between English and Continental sanitation, that one of the questions that has most recently been engaging the attention of the city and has led to practical steps being taken is that of the inspection of meat by specially trained veterinary surgeons. Although ahead of Great Britain in this respect, Norway has lagged a little behind France, Belgium, Germany, and Denmark, but is evidently determined to make up her lost ground. There is no abattoir at present; this will come, doubtless, before long. There are about thirty private slaughterhouses, where are to be found, as is pointed out in a report of the city engineer, the defects so commonly associated with the same in London and all over Great Britain—bad situation, defective ventilation, insufficient accommodation for the animals, &c. Since Jan. 1st, 1894, however, no meat that is slaughtered in Christiania can be sold unless it has first undergone an expert examination by a veterinary surgeon. The station that has been built is admirably adapted for its purpose. It is a one-storeyed building, with four rooms opening one into another; each room has a tiled floor sloping to a central drain, and the walls are of glazed earthenware tiles. In each room are two large marble slabs on rollers, which can be run outside the doors when any meat arrives. The following figures will serve to illustrate the activity that has prevailed in this department. Between Jan. 1st and April 1st there have been examined 9528 oxen, 3077 pigs, 2355 sheep, 11,410 calves, and 285 horses. Of these, there have been seized 34 oxen, 18 pigs, 3 sheep, 112 calves, and 8 horses; altogether, more than eight tons weight of meat, most of which would have otherwise found its way to the market and been sold. As in Paris, Berlin, and elsewhere, localised tubercle is not regarded as a sufficient cause for seizure; the meat is, however, branded with a special stamp, marking it as of second-class quality.

NOTIFICATION AND ISOLATION OF INFECTIOUS DISEASES.

Another department, the administration of which is decidedly good, is that relating to the notification and isolation

of infectious disease. In fact, Christiania can be regarded as quite one of the pioneer cities in notification, for as long ago as 1874 this was made compulsory. In addition to the diseases notified in England are varicella, syphilis (hereditary and acquired), and gonorrhœa. No payment is made for the return, although there has been talk of it. The return is made on a printed postcard, which requires ampler information as to each case than is usually given on the inadequate form for which 2*s.* 6*d.* has to be paid in England. Disinfection of bedding and clothing is carried out by means of a Washington Lyons steam disinfector. Reliance is placed chiefly, as regards house disinfection, on soap and water and carbolic acid, 1 in 20. Sulphur fumigation has been given up. That essential of the process of disinfection—namely, accommodation of the household during the time that this takes—is provided for in a special building, which is also designed to serve as a place where relatives who have been exposed to infection from dangerous infectious diseases may be placed in quarantine. There are three such buildings, one for cholera, another for small-pox, and the third for diphtheria and scarlet fever. The Infectious Fever Hospital is situated just outside the borders of the town. It is of quite recent date and consists of a number of isolated one-storeyed pavilions constructed after a good plan. During the cholera panic in the autumn of 1892 two small pavilions of wood were run up here, each with sixteen beds. To complete the original plan of the hospital, two pavilions and the administrative block yet remain to be built.

VITAL STATISTICS, &c.

The birth-rate in 1892 was 33·5 per 1000, and the death-rate only 19·3. In the working-class districts both are, as might be expected, considerably higher. In one the birth-rate was 48·0 per 1000, and the death-rate 28·2. Illegitimate births are about 15 per cent. of the whole. Infant mortality (1887–90) was 165 per 1000. The death-rate from the seven principal zymotic diseases was 4·1 per 1000 in 1892. It is worthy of note that typhoid fever caused only 6 deaths, and not one was attributed to small-pox. The phthisis death-rate in the same year was 2·8 per 1000, and 14·3 per cent. of all causes of death were ascribed to this disease. Christiania has suffered for the last ten years from a very severe epidemic of diphtheria, now happily declining. In the decennium 1870–79 only 76 deaths were put down to it, whereas in that of 1880–89 this number rose to 1961. It reached its maximum in 1889, when 1248 cases were notified. In 1892 the number notified had fallen to 267, with 81 deaths. The case mortality has been about 30 per cent. Its exact cause has not been clearly traced. School influence has not been thought to have played an important part.

As regards cholera, Christiania remained perfectly free in 1892 and 1893. The anxiety, however, that prevailed at that time was not without justification, for during previous epidemics the city had suffered much. In 1833 there were 806 deaths from it, and 1421 in 1853. The opportunity was therefore seized in August, 1892, to systematically clean out the city from one end to the other. Quarantine regulations are still enforced. A ship with cholera on board would have to undergo five days' quarantine; this, however, would not apply in the case of ships merely arriving from infected ports, but without actual cholera on board. With regard to Scandinavian vessels arriving in English ports it is a pleasure to have to state that it is the opinion of those most competent to judge—namely, the port medical officers of health—that their cleanliness and general sanitary condition are an example to all other nations. This is considered to be mainly due to the fact that deck-houses and not forecastles are the rule, which ensure better ventilation and more light. Disease is rarely met with on board. Leprosy is diminishing so much in Norway that there is talk of converting the large leprosy hospitals, many rooms in which are untenanted, into isolation hospitals for phthisical patients.

SANITARY ADMINISTRATION.

Unlike the condition of things usually prevailing abroad, where sanitary matters are consigned to the tender mercies of the police, there is in Christiania fortunately a special department for public health. By the sanitary law of 1860 every district in Norway was compelled to have a "Sundheds-kommission," or health office, consisting of the "stadsfysikus," or medical officer of health, the engineer, the magistrate, and three other members elected for the space of four years. The position of "stadsfysikus" in Christiania dates back for considerably over a hundred years. It is at present filled by Dr. Bentzen. The most important subordinate position is that of "Sundheds inspektor," at present filled by Dr. Berner, an office not comparable with that of our sanitary inspectors, as the holder must be a medical man and acts in the capacity of deputy medical officer of health. Naturally health requirements are very much the same all the world over, and this health office occupies itself energetically with much the same subjects as do our own at home. This is seen in the very interesting and valuable yearly reports of the Sundheds kommission, giving statistical tables and treating of matters of interest from a public health point of view with which it has been occupied. Its power for good would doubtless be considerably extended if, as it wishes, the city council would only hand over to it the carrying out of all matters of municipal hygiene now inadequately dealt with by private companies. Such definite by-laws as, for instance, we have in the model by-laws of the Local Government Board do not exist.

The conditions under which the sale of milk occurs leave much to be desired. The same room in which it is kept is often used as a sitting-room, and very often the sale of the milk is associated with that of other articles calculated to prejudicially affect its taste or purity.

Mention should perhaps be made of a matter to which the public analyst has repeatedly called attention—the fact, namely, that in cotton stuffs imported from England he has frequently found arsenic present, and in sufficient amount sometimes to be prejudicial to health, while similar goods coming from Germany have been quite free from arsenic. Samples of these stuffs were sent by the British Consul to the Home Government for analysis some years ago, and, the results of Dr. Schmelck being confirmed, a circular on the subject was addressed to the manufacturers. The improvement manifested after this has now quite disappeared, and this year in about 50 per cent. of the samples sent to the laboratory arsenic has been found.

In conclusion, I should like to express my thanks to the various members of the Health Office and others for having enabled me to see the various points of interest in Christiania, and for the material they kindly placed at my disposal.

THE ANTWERP UNIVERSAL EXHIBITION.

(FROM A SPECIAL CORRESPONDENT.)

Antwerp, June 18th.

IT must at once be confessed that, so far, the Antwerp Exhibition is not a success. This is due to two causes. Firstly, the exhibition was not ready. Even now there are many departments that are not complete, and the sound of hammering and work still disturbs the visitors. Secondly, the weather has been most unfavourable from every point of view. Rain and heavy leaden clouds have been the daily rule. Nothing could be more dispiriting. However, it is better that it should rain now than when the exhibition is completed. Viewing the exhibition as a whole, had everything been ready punctually, it would have done great credit to the town of Antwerp. Of course, Antwerp is but a provincial town, and it is manifestly absurd to compare its exhibition with what has been achieved in London and Paris; but it is a much finer exhibition than those held at, for instance, Manchester and Liverpool, though both these towns have a larger and more wealthy population than Antwerp. If the Antwerp Exhibition is finer than the British provincial exhibitions, it must also be said that the British section at the Antwerp Exhibition is the worst of all the sections—so far, at least, as the great Powers are concerned. Of course, we have more to show than, for instance, Bulgaria, or Greece, or Japan, or Siam; but we are very much behind Germany, Austria and especially France, for the latter is the best of all the foreign sections. Beyond a few flags hung from the roof there is no attempt at general decoration in the British section, though of course there are some exhibits that are not devoid of artistic merit. For instance, there are the Indian carved wood cases in which Messrs. Burroughs, Wellcome, and Co. place their well-known tabloids. In Antwerp a great feature has been made of Belgian enterprise in the Congo. The other day when His Majesty King Leopold visited the exhibition he displayed great interest in examining the medicine chest containing the tabloids Mr. Stanley took with him in his explorations of Africa. It is

a battered, weather-stained chest. The leather covering over the glass bottles, in many instances, is worn away, but I was still able to see that one of them was labeled in a more graphic than scientific language, "Livingstone's rousers." This historical chest contains forty bottles in all, and they have the defect of being all of the same size. Now the newer pattern of tropical medicine chests contains bottles of various sizes so as to give a larger supply of the medicaments more generally required. By the side of the medicine chest there is Stanley's well-thumbed medical guide, and Surgeon Parke's small and well-used case of instruments. The King of the Belgians examined with special care these relics and accepted from the representative of the firm two large medicine chests, one of them destined for a hospital in the Congo, and the other for a civil hospital in Belgium. The principal new feature in Messrs. Burroughs, Wellcome, and Co.'s show is the tea tabloids, which are invaluable to travellers. A very small, neat box contains 100 tea tabloids, costs only sixpence, and with it 100 cups of tea can be made by simply pouring boiling water on the tabloids, which are placed, like a piece of sugar, at the bottom of the cup. As the coarser or woody part of the tea leaf has been removed in the process of manufacture, these tabloids are stated to be free from the more objectionable properties of tea, and, if this assertion is proved by analysis, the precautions that should be taken with ordinary Indian teas need not be applied to the tabloids. Their cheapness, their portability, and the facility with which the tea can be made are all great advantages, especially to the travelling public.

Another feature of the British Section—perhaps the most popular feature—is the Canada Club. Here, with true colonial hospitality, Canadian whisky is bestowed on numerous visitors. This, the "Canadian Club" whisky, is of special interest to the students of the Gothenburg system, the Swiss Alcohol Monopoly, and other efforts of various Governments to prevent alcoholism by taking measures to protect the populations concerned from the sale of immature alcohols. According to the Canadian law distillers cannot take whiskies out of bond before two years. Each bottle of the "Canadian Club" whisky bears a label, affixed by the Government Excise official, stating the year in which the whisky was made. That exhibited at Antwerp bears the stamp of the year 1886. In the analysis made some time ago at THE LANCET Laboratory of this whisky it was found to be free from all raw and injurious products, and it is the excellent control exercised by the Canadian Government that has enabled this whisky to acquire a high reputation in England. The manufacturers, Messrs. Hiram Walker and Sons, burn the insides of their casks, so as to produce an internal charcoal coating. As fusel oil and deleterious ethers have a great affinity to charcoal, this excellent disinfectant helps materially to purify the whisky. Also, instead of placing, as is the usual custom, the whisky in large vats, it is stored in small casks of only sixty gallons capacity, and kept at a certain stable temperature. Thus there is a freer ventilation of the whisky, which facilitates the maturing process. Altogether, therefore, this whisky, from the public health point of view, deserves notice; and fortunately, in this instance, what is wholesome is also agreeable to the palate.

With respect to agreeable flavours, close by Messrs. Brand and Co. exhibit preserved turtle soups and other delicacies, some prepared especially for invalids and others for ordinary consumption. Among these there are excellent potted meats that only cost sixpence a tin weighing about a quarter of a pound. These, like the tea tabloids, are very handy for travellers, for they provide the wherewithal for making savoury sandwiches. Messrs. Brand and Co.'s preparations for invalids are so well known that they need not be described again; but I am informed that at Rome during the International Medical Congress, where they also exhibited as well as here at Antwerp, these preserves have been much noticed by continental medical men.

Mr. Benjamin Edgington, tent and rick cloth manufacturer, who provided Stanley and Emin Pasha with tents, exhibits what is called the Shakespeare cot. This, again, is likely to be of service to travellers. It consists of a light, strong, wooden framework, easily folded and packed in a trunk. When opened out it makes a canvas cot, the lower part being soft, so that there is no need of a mattress. As the entire cot weighs only from ten to fourteen pounds, it can be carried about with ordinary luggage; so that persons travelling with children need not hire cots, and are independent of the doubtful cleanliness of the extra bed put up for little children.

Of more purely scientific interest are the microscopes exhibited by Messrs. W. Watson and Sons, especially those destined for bacteriological researches. Some of these microscopes were made according to the specifications of Dr. Henri Van Heurck, the celebrated microscopist of the Antwerp Botanical Gardens. The workmanship is excellent; the milled head is so perfect that the body under observation can be moved up or down one-three hundred and thirty-third part of an inch, and the adjustment so sensitive that the observer can get the hundredth of a turn of the milled head, and this gives a movement of one-thirty-three thousand three hundredth part of an inch ($\frac{1}{33333}$ of an inch). This firm also shows a varied collection of microscopic slides, and the visitor will find much to interest and to instruct him at Messrs. W. Watson and Sons' exhibit.

(To be continued.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF FELLOWS.

A MEETING of the Fellows of the College under the new regulations was held in the theatre of the College after the election of members of Council on Thursday, the 5th inst., the President, Mr. J. W. Hulke, F.R.S., being in the chair.

The minutes of the extraordinary meeting on March 19th were signed by the Chairman as correct.

The Chairman reported that after the receipt of the resolution passed by the Fellows at their last meeting the Council had adopted a resolution expressing approval of the report of the Gresham University Commission in the terms of the resolution of the delegates of the two Royal Colleges.

The regulations of the Council relating to the meetings of Fellows were entered on the minutes. (These have already been given in our columns.)

Mr. W. H. Bennett then moved: "That this meeting of Fellows of the Royal College of Surgeons of England desires to congratulate the Council on the proposed alteration of the by-law relating to the election and admission of members of Council." By these changes every Fellow will in future receive a voting paper without having to ask for it, and the voting papers may be received at the College up to the commencement of the election. Mr. Bennett remarked that this was a very radical concession to the Fellows, and that it showed that the Council were desirous of meeting the wishes of the Fellows in every reasonable way, and that now there was no question of any importance that need cause disagreement between them, and in the future he felt sure they would work together for the good of the College.

Mr. A. A. Bowlby seconded the resolution.

Mr. Holmes said that he was certainly under the impression that this change had originated from a representation made to the Council by the Association of Fellows.

The resolution was carried unanimously.

The proposed changes in the by-laws relating to misconduct of Fellows and Members were taken as read, as they had been circulated.

Thereupon Mr. Frederick Treves moved "that this meeting of Fellows cordially approves of increased powers being given to the Council to deal with cases of misconduct on the part of Fellows and Members, as contemplated in the proposed alteration of the by-law," and said that there was great unanimity in favour of this change, and that when the Council in 1889 asked for sanction for a similar change the refusal of permission by the Home Office was chiefly to be attributed to the fact that the Fellows had not expressed their wish for any change, and, therefore, if this resolution were passed no opposition need be feared.

The motion having been seconded by Mr. Warrington Haward, the Chairman remarked that the Council was often pained that it could not deal summarily with some cases that occurred. The meeting adopted the resolution without a dissentient vote.

The President, on behalf of the Council, asked the views of the meeting upon the desirability or otherwise of a dinner, alternating with the Hunterian Festival, being given by the College to distinguished guests, with the object of returning courtesies shown to the College through its President, and of helping the College to maintain its position among other great institutions, and said that the President of the College

was often placed in a rather unhappy position, as he was frequently invited, as the representative of the College, by scientific institutions and other corporate bodies, and yet he was unable to return the courtesy except privately. The City Companies might well be classed as scientific institutions, as many of them were great supporters of educational institutions and scientific research. The meeting expressed approval of the suggestion.

Mr. H. W. Page moved "that the Council be requested to take steps for obtaining the opinion of the Fellows on the mode of election to the office of President," and said that the motion was not intended in any way to be revolutionary, but all institutions were being modified in a democratic direction, and it was necessary that the College should move in the same way. He believed that there was a feeling of discontent with the present mode of election, though it had resulted in the appointment of very eminent men. The alteration would need to be embodied in a new charter, and he urged that the Council should endeavour to find out the general wish of the Fellows and act on the result, whatever it might be. Mr. J. Griffith having seconded the motion, Mr. R. M. Craven said that he saw no advantage in any change, and if the proposed alteration were to be made it might easily happen that a president might be elected who was entirely unacquainted with the working of the College. He thought there would be danger of canvassing being employed.

Mr. Holmes considered that the method of election of president adopted by the Royal College of Physicians was decidedly better than their own. Not very long ago it was customary for the Council of this College to elect the senior member who had not passed the chair, and the annual change diminished the dignity of the office. Though this custom was no longer followed, yet one could be sure that the present method would not be permanent. He thought that the most important question at the present time was what control was to be given to the general body of Fellows over the actions of the Council.

The President observed that the Fellows of the College of Physicians formed a much smaller body than the Fellows of this College, and that if the proposed alteration were made there would be great risk of the election of a president to whom the inner working of the College was entirely strange. Moreover, the man likely to be elected by a popular vote would not at all necessarily be the one who would best perform the duties of the post.

On being put to the vote the resolution was carried.

Mr. Victor Horsley then moved: "That, in the opinion of this meeting, the concessions made by the Council and such other changes as the general body of Fellows may desire should be embodied in a new Charter." At the invitation of the Association of Fellows he brought forward this motion. He thought that the best method to do away with the unrest which existed between the Council and the Fellows would be that the Council should nominate a joint committee of the Council and Fellows to report to the Council on the changes deemed advisable. If this were done he felt sure that the Government would offer no opposition to a new Charter.

Mr. A. T. Norton, in seconding, said that ten or twelve important concessions had been made by the Council. He thought that there were two important points that must be striven for: First, that Fellows might appoint an annual committee to confer with the Council; and, secondly, that no alteration of the constitution of the College should be made without the consent of the Fellows.

Mr. H. G. Howse said that the resolution was too vague, and the reasons offered were not strong enough for changing their Charter. He considered that no additional powers were needed for the Fellows to be able to elect an annual committee, and he thought the power of veto asked for in the second part of Mr. Norton's amendment was absurd.

Mr. W. Rivington said he would vote for a new Charter, as the Council itself found the present Charter defective. They had been long doubtful whether they were able to call a meeting of the Fellows. If the new Charter permitted the appointment of an annual committee he thought that both the Association and the Society of Fellows would die a natural death.

Mr. Golding-Bird considered it premature to discuss this question, as the changes referred to in the resolution had not yet been decided. He therefore moved an amendment "that it is premature to consider the question of a new Charter until the changes required have been resolved upon." This was seconded by Mr. W. H. Bennett.

Mr. Mayo Robson said that the hands of the Council needed strengthening by a new Charter, but that at present it was premature to apply for one.

Mr. Horsley observed that the resolution expressed the opinion of this meeting in favour of a new Charter.

The President said that the Council had pledged itself to ask the opinion of the Fellows on all great changes.

The amendment was then carried.

Mr. Page wished to add to the amendment an addendum urging the appointment of a consultative committee of the Council and Fellows. Some discussion followed, but the chairman said that as this introduced entirely new matter, and the twenty-one days' notice required by the regulations had not been given, no such amendment could be accepted.

The proceedings then terminated with a vote of thanks to the President.

THE ARMY ESTIMATES.

THE House of Commons again went into Committee of Supply on the Army Estimates on the 6th inst., when the vote for works, buildings and repairs, and various other matters were discussed. As several points of interest were touched upon in the course of the debate we need scarcely apologise for adverting to them and adding a few remarks by way of comment. Mr. Freeman-Mitford was for putting the barracks of the country under the Board of Works, considering that if trained architects were employed the barracks would be better and more cheaply constructed than was the case at present under the Royal Engineers; and Sir Acland Hood complained of the unsatisfactory state of part of the drainage at Aldershot and of the insanitary condition of certain parts of the Wellington Barracks. Mr. Campbell-Bannerman, however, called attention to the failure of the block of buildings containing the Home, Colonial, and Foreign Offices for all the purposes for which it was intended, and to the Admiralty block now being erected, adding that Board of Works' buildings were not such models of excellence that "they were to turn up their noses at the Royal Engineers," who were, he believed, better qualified to erect barracks than pure civilians would be, and, in illustration, he referred to the new barracks at Aldershot. As regards Wellington Barracks, London, the particular complaint that had been brought forward would be attended to; but he contended that the general drainage of the barracks was good and had not been complained of, and that the health returns of the troops occupying them were satisfactory. The drainage at Aldershot was old and required to be remodelled and renewed, and this would be attended to. A discussion then followed on the vote for military education, especially in connexion with the recent report of the committee on that subject and its recommendation to make Latin an optional subject. This, it was urged, will operate greatly to the disadvantage of the public schools. We may say that we agree with the War Minister in thinking that the recommendations of the committee have been much misunderstood. Latin is not now compulsory at army competitive examinations in the sense that a candidate must make marks in it, and he can take it up in future as an optional subject and make as many marks in it as he does at present. We are far from undervaluing the importance of classics or the advantages of a public school training; still, it must be confessed that boys very soon forget their Latin and Greek because these are of little use to them in the service, whereas a knowledge of modern languages is of very great everyday use to them, and therefore likely to be maintained and improved. But it seems to us that what the Government has to do is to formulate from their point of view and for their purpose a sound curriculum, with the sole object of obtaining the most suitable material for the service and without favour or affection for any particular schools or systems of education. No doubt the training—physical, moral, and mental—that a boy gets at a public school usually has a very salutary effect on his life and character; and, as a matter of fact, the majority of candidates for the army have been at such institutions, although their parents often remove them and temporarily send them elsewhere because they can reap more advantage elsewhere. Public schools should furnish the requisite education for the military services to enable boys to go up straight from them to the Woolwich and Sandhurst

examinations, and, as it seems to us, it is their own fault if they do not. We should like to hear what the boys at these military institutions have themselves to say on this subject, for they should have a shrewd knowledge of what are the qualifications necessary to make a good officer. It is, we happen to know, quite a mistake to suppose that they have not reflected on the matter and discussed it among themselves, and in a good many instances arrived at intelligent and sensible conclusions in regard to it. Why should not their opinion be obtained among others? As regards the physical examination of candidates for the services, seeing that physique is of such manifest importance for those walks of life, we do not see why the possessor of a superior physique—weight, stature, chest measurement, and integrity of the sense organs—should not score marks for it. Be this as it may, the regulations on this head should be very plainly laid down and invariably adhered to in practice. Touching the proposed main drainage scheme for Dublin, Mr. Campbell-Bannerman stated emphatically that he recognised the urgent necessity of something being done to cleanse the Liffey and that he had no desire to put any impediment in the way of this great improvement; he suggested, as an alternative proposition, that the corporation should purchase the site and buildings at Pigeon House Fort for the sum that it would cost the Government to replace those buildings elsewhere. We need scarcely add that any main drainage scheme will, of course, be incomplete without a thoroughly good system of house connexions being carried out at the same time.

It strikes us that there is a great waste of power expended in these discussions on the Army Estimates. There are no end of questions started, the War Minister is "heckled," and things remain at the end of it all very much where they were. The debate is altogether too discursive, it embraces too many subjects, and it lacks concentration and precision.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

THE annual dinner of the above society was held at the Grand Hotel on Friday, June 29th, the president, Dr. Payne, occupying the chair. There was a large attendance, and among the visitors present were Sir Walter Foster, M.P., Mr. Hulke (President of the Royal College of Surgeons), Professor Clifford Allbutt, Dr. Pavy (President of the Pathological Society), Dr. Tatham, Mr. W. H. Power, Professor Sherrington, the Vice-President of the Institute of Actuaries, and the Professor of English at the McGill University, Montreal.

After the usual loyal toasts, Sir Joseph Fayrer proposed "The Public Health Service," to which Sir Walter Foster and Dr. Whitelegge responded. The former referred in highly complimentary terms to the work performed by the Medical Department of the Local Government Board during the General Cholera Survey, and to the brilliant services which Dr. Thorne Thorne had rendered to this country and to the cause of medical inspection at the several International Congresses which he had attended on behalf of the Government of Great Britain. Referring to the excellent work done throughout the country by medical officers of health, Sir Walter Foster deprecated the absurdly small pay accorded by numerous sanitary authorities for the great services which they received, and assured his hearers that so long as he remained a member of Her Majesty's Government he would do all in his power to amend the present unsatisfactory condition of affairs. Dr. Whitelegge in his reply spoke of the high qualifications which were now required by the regulations from those entering the public health service, and of the great expenditure, both of time and money, which the preparation for the diploma of public health necessitated. With these requirements he contrasted the ludicrous salaries offered, and expressed a hope that a better state of affairs would soon be brought about. He spoke, too, of the steady and progressive sanitary work which, it is admitted on all hands, has been performed by many county councils, and of the stimulating effect which the threatened invasion of cholera has had upon sanitary progress.

Dr. Thorne Thorne, in proposing "The Visitors," referred to the broad aspect of the term "public health," and to the manner in which it was essentially interwoven with the study of clinical medicine, pathology, bacteriology, and statistics; and alluded to the distinguished services which many of those present had rendered in their several branches. He also spoke of the great sanitary reforms achieved in the metropolis by the London County Council, and congratulated the society on having obtained the services of Mr. Shirley Murphy as President. Mr. Hulke and Professor Clifford Allbutt responded to the toast.

In proposing the toast of "The Epidemiological Society," the Chairman referred to the foundation of the society in 1850, and the good work it had done in relation to public health, medical statistics, and tropical diseases, as well as in recording epidemics. The transactions of the last two years, he said, contained papers on cholera, influenza, and other subjects, which fully maintained the high standard of the former volumes; but the volume for this year would present an entire novelty in the form of a contribution written two centuries ago. This was a contemporary manuscript account preserved in the British Museum by one William Boghurst, a London apothecary, of the Great Plague of London in 1665. This very valuable document had been quoted from in the "Encyclopædia Britannica" (article Plague) and in Dr. Creighton's "History of Epidemics," but had never been printed. The historical notices contained in it were of the highest importance, differing in some respects widely from the well-known work of Hodges. The Epidemiological Society had, on the suggestion of its President, undertaken the publication of this work and was thereby going to make an important addition to the history of epidemics. By a mere coincidence, though a curious one, this issue of a historical account of the old plague was coming out in the same year which brought tidings of a fresh outbreak of the old enemy in the far East, in Hong Kong and Canton. This news might appear startling and unexpected, but it had long been known to all who were interested in these subjects that China was one of the original seats of plague and was probably the source of the terrible Black Death. The disease (Dr. Payne continued) is certainly endemic in the province of Yunnan, having there all the characters of a soil disease. From these high regions it has descended to the seaport of Pakhoi, and from Pakhoi has probably been carried to Hong Kong and Canton. The increased rapidity of communication in modern times has no doubt, as in the case of cholera and influenza, helped to spread the disease. The modern epidemic seems to present all the features of the old plague, including its terrible fatality, amounting to 75 per cent. of those attacked, a death-rate higher than is known in any other epidemic disease. It will certainly be asked whether there is any chance of the infection spreading here. Now, at the time when the plague was endemic in the Levant it was never believed to be brought direct to England by sea; and the distance from China is at the present day, perhaps, comparable, allowing for the more rapid passage by steam, so that, except by a succession of cases in one ship, there seems little chance of the plague being brought to an English port; and, even should the mysterious "it" arrive at our shores, it would not find the special soil in which it flourishes—that is, the local conditions which appear to be necessary for its actually taking root. Whatever may be the precise nature of contagion in plague, the lesson taught by the experience of cholera and yellow fever is, no doubt, the true one—that our chief task and best security lie in guarding against whatever may offer a suitable nidus for the germ if it should be imported.

The proceedings terminated with a graceful allusion from Sir Benjamin Ward Richardson to the services rendered by Dr. Payne to the Epidemiological Society.

VENTILATION AND WARMTH.

EVERYONE must admit that our present systems of heating are far from satisfactory and that many of the existing methods of ventilation are crude and clumsy if not often dangerous, and yet there are but few indications of steps being taken to effect any real improvement. Progress, indeed, in warming and ventilation, especially in this country, is practically barred by prejudice and the fixity of sentiment. As far as the heating of large buildings is concerned, however, this sort of objection may be waived, since it is in the home chiefly that the Englishman cherishes the open system of firing with its cheery glow, which in his mind in the dark,

dreary, evenings of winter is associated with and is symbolic of comfort, hospitality, and welcome. We have already shown how the question of sentiment may be set at rest by the adoption of appliances which are satisfactory also from the scientific, sanitary, and economical point of view.[1]

It is evident that if draughts could be properly controlled and could conveniently and economically be converted into warm, unvitiated currents of air, we should possess an admirable means of heating and ventilating our dwellings, and many an invalid and delicate one would be spared the dread of the approach of winter. Such is practically the end in view of a system of heating and ventilating which has quite recently been brought to our notice by Mr. John Grundy of 30, Duncan-terrace, City-road, London, and Tyldesley, near Manchester, who, though he emphasises the advantages to be gained by the use of a central heating apparatus (which is also smoke-consuming), has further given his attention to ordinary grates so constructed as to consume smoke, thus obviating loss and waste of heat and economising fuel. The Grundy system of heating buildings, which aims also at supplying fresh warm air in the rooms of dwellings, is, with its improvements, embodied in the apparatus about to be described. A working model of this apparatus was exhibited recently at the Agricultural Hall. The heating chamber is conveniently located in the basement of the building, and very little bricklayer's work is required, it is stated, to complete its setting. The air enters from the outside by a screened window into the fresh air chamber, where any dust carried in with the air can settle down, and is then admitted by a sliding door or throttle valve into the fresh air passage, and thence to the heating chamber. The fresh air passages can be entered by an attendant through the access door for the purpose of cleaning out whatever may have been carried in from the outside, and the access to the heating chamber proper by the door provided to clean the apparatus itself and the heating chamber, which should be done at the beginning of each winter. The pure warm air passes along the ceiling of the heating chamber and enters into the vertical or horizontal flues leading to the rooms to be heated. Each room has a separate flue, with a warm air inlet about six feet above the floor. The vitiated air is removed by a separate flue leading above the roof and having exhaust valves—one a little above the floor for winter ventilation and another immediately below the ceiling for summer ventilation. Although it is possible to regulate the total heat produced in each heating chamber by the quantity of fresh air admitted, it is yet impossible to warm all the rooms equally and ventilate them properly as well, for some rooms, being less exposed, naturally attain the desired temperature sooner than others. In some rooms the temperature may rise rapidly on account of gas flames or of a large number of people being assembled, and it is therefore of importance to give each room warm or cold air, just as may be required, to attain this. The fresh air channels begin below the ceiling of the heating chamber and are connected with the fresh air passage. In each fresh air passage there is a mixing valve regulated from without, by which pure cold and pure warm air can be mixed in any proportion. When the heating begins these mixing valves are closed, but as soon as in any room the temperature threatens to rise above the degree desired the mixing valve is opened so as to admit sufficient cold air to counterbalance such an excess, and the exact degree desired can thus be obtained and maintained. By means of a throttle valve placed in the warm air flue a room may be completely cut off from all heating and ventilation. When desired the in-coming fresh cold air, prior to passing through the heating chamber, can be filtered in a very simple and perfectly automatic manner.

This description only conveys a general idea, but obviously the carrying out of the work has to be adapted to the special conditions and requirements of each case. The system appears to us to present many important features in regard to the healthy warming and ventilation of dwelling houses. Thus, according to our observations the air so warmed is not deteriorated by over-heating (in contact, for instance, with hot metallic surfaces), its inspiration produces no oppressive feeling, and it does not become "devitalised" as is the case with so many forms of heating appliances. Whilst, however, we see no reason to doubt the important hygienic advantages which the adoption of such a system would confer, yet we cannot speak from experience on such points as the labour involved in its installation, the expense of outlay and maintenance, or as to how far its application to modern requirements would be really practicable. The application of the system to cathedrals, public halls, and dwellings has, we understand, given general satisfaction—a result which is quite in accord with our own observations of its working powers. We need hardly add, however, that we cordially approve of a system which not only aims at the healthy heating of buildings but, at the same time, at providing, suitably tempered, a constant influx of pure fresh air. When properly installed there is no reason to doubt that such is the desirable end the system referred to attains.

[1] THE LANCET, March 21st, 1891, and March 5th, 1892.

THE BERLIN PUBLIC SLAUGHTER-HOUSE.

(FROM OUR SPECIAL CORRESPONDENT.)

SOONER or later, let us hope as soon as possible, London will have its public slaughter-house. Why should London remain behind so many British provincial towns, and not be on a level with Continental capitals such as Paris, Brussels, Berlin &c.? On a former occasion I described at length the Brussels public slaughter-house,[1] which was one of the first, if not the first, public slaughter-house built in Europe. In Berlin the slaughter-house is a comparatively recent creation, and is, therefore, more perfect than the Brussels municipal abattoir. Also Berlin is a much larger town. Then the slaughter-house at Berlin was not built for the sake of profit. The sole object in view was the preservation of public health. It is situated at some distance outside the town, and though Berlin occupies the centre of what, in the main, is a flat plain, nevertheless the slaughter-house is on a slightly elevated ground. If all the surroundings are flat a small elevation suffices to secure good drainage and a better exposure to the purifying effects of the wind. It was a heavy, hot day when I visited the slaughter-house, and thus I was better able to appreciate the, comparatively speaking, bracing site it occupied. The next impression was that of the vast scale on which everything had been done. Very wisely—and, indeed, this is almost indispensable—the slaughter-house and the cattle market occupy the same ground and are connected with all parts of Germany, and indeed of Europe, by an elaborate railway system. Standing on a bridge built to cross the many lines that converge to this cattle market and public slaughter-house a fine view can be obtained of the whole enterprise. The ground where the trains are stopped for the cattle and the sheep to be taken out of the trucks is identically the same length as the most celebrated thoroughfare of Berlin—Unter den Linden. The space between the railway lines is carefully bricked over and cemented. This hard flooring is convex, and the highest portion is between two trains, the lowest portion between the metals—that is, under the trains. The importance of this arrangement will be easily conceived when we take into consideration the necessity of very carefully cleaning out the cattle vans. These are generally carpeted with sand instead of straw, and this sand is so soiled by the cattle that it could be sold for manure were it not for the difficulty of carting away such a heavy substance. Consequently, the railway administration takes it and uses it for fillings or for the building of railway embankments; but the sand has first to be cleared out of the waggons, and what cannot be shovelled out is washed away with a hose and strong jet of water. So as to increase this force some big reservoirs have been built on the side of the line, and here the water is stored at a height and in quantity sufficient to considerably augment the pressure in the cleaning hoses. The trucks are sluiced out with cold water in summer and warm water in winter, and then scrubbed with a 5 per cent. solution of soda. These precautions are taken all the year round irrespectively of the prevalence of any epidemic. It should be noted that the State exercises control over all living animals, and the municipality over all dead animals or meat; in other words, the railways are State property, and the slaughter-house municipal property. The State, however, finds it more convenient to contract with the municipality for the cleaning of the cattle vans, and pays

[1] See THE LANCET, Sept. 24th, 1892.

the Berlin Town Council two marks, or 2s., for each van cleaned. The municipality not only does this work satisfactorily, but manages to clear a net profit on the transaction. In dealing with so much sand considerable care must be taken not to block the sewers. There are, consequently, a number of gullies and two very large dip traps where the sand can accumulate, and only comparatively clear water reaches the sewers.

Near the railway lines are enormous sheds, mostly built of brick, stone, and iron. The sheds are, of course, ventilated through and from end to end. The central parts of the roofs are generally lantern shaped, so that it is easy to open windows in the upper or lantern portion of the roof without causing a draught. These sheds can hold 2000 sheep each, and in the cattle market portion of the building 18,000 sheep can be sheltered and fed. The sheds for bullocks and large cattle generally measure 72 metres by 217 metres, and will hold 5000 head of cattle. This is altogether apart from the stalls where the cattle are kept previously to being slaughtered and after they are purchased by the butcher. The pavement between these sheds is not always what might be desired. It is not very regular or water-tight, but the necessity of improvement in this respect is recognised by the authorities, and it has been decided to gradually substitute black Belgian pavement laid in asphalt for the actual sandstone laid on the earth. Far away from the general buildings—that is, in a thoroughly isolated position—there is a small slaughter-house where diseased animals are killed. If they are ascertained to be diseased while in the train, of course, they are taken directly from the waggon to this isolated place. In any case, no sooner is an animal discovered to be in bad health than it is at once isolated. There is so large a number of cattle brought to this market that, of course, cases of infectious disease are of frequent occurrence, and no slaughter-house should be without proper provision for the isolation and separate slaughtering of infected animals. The number of cattle that come to the Berlin market is so great that, though they only remain there for a very short time before they are slaughtered, nevertheless the sale of the manure they produce brings in an annual income of 50,000 marks. This still continues, in spite of two severe blows that have been dealt to the cattle trade of Berlin. Formerly from 2000 to 4000 sheep were despatched every week from this market to London. Now new restrictions have been imposed. The sheep must be killed the moment they land in England. This means that the meat must be sold at once, whatever the condition of the market. The disadvantage thus caused is so great that the English trade has fallen off altogether. An equally important trade used to be carried on between Berlin and Paris, also in the sale of sheep; but protective measures have been enforced in France which have put an end to the business. Both for the Paris and the London trade that portion of the slaughter-house which has been prepared in case of war was employed. The railway runs direct into this part of the slaughter-house, so that the meat, fresh from the butcher's hand, can at once be packed in the railway truck and sent to the front.

The slaughtering sheds are very lofty, very well exposed to light and air, but I cannot say that in any other respect there is anything remarkable about them. They are paved with ribbed hardware tiles. There is no special contrivance for preventing blood accumulating on the floor or for preventing its adherence to the walls. In spite of the slight ribbing in the tiles the floor is fairly slippery. The central portion of the slaughter-house pavilions or blocks is two storeys high and forms a lofty, cool, shaded passage. Here, corresponding with the back of each separate slaughter-house, are iron railings, behind which the butcher can hang up his meat without fear of it being stolen. The slaughtering sheds are reached from the outside of the block of buildings and slant off from the central passage. Above each shed there is a small room where the butchers can change their clothes. There are the same arrangements on the other side of the central passage. Thus the rows of slaughtering sheds are back-to-back, separated by a central open passage, which, having numerous openings in the roof, acts as a sort of ventilating shaft. In front of each slaughtering shed there is a large open yard, and for each shamble a table on wheels and an iron bucket. At the proper moment the table is rolled into the shed, and on it are placed the intestines of the slaughtered animal. The table thus loaded is brought out into the yard and the intestines emptied in the open air. There is also ready at hand a specially contrived iron pail with an arrangement to keep it closed when not in use, in which are placed the intestines of any animal found to be diseased, so that they may be separately treated and destroyed. Under the slaughter-houses there are cellars. Some have simply a large stone ice trough in the centre of the cellar for the preservation of meat; others, on the contrary, have wooden boarding round the walls, behind which ice is placed, so that the cellars are kept delightfully cool. The temperature in summer is thus maintained at about 2° to 3° C. above freezing point, and in such a temperature meat can be preserved perfectly for from fourteen to twenty-one days. For a cellar measuring about 30 ft. by 15 ft. the cost for ice would amount to about 10s. a week.

The preparation of tripe and the cleaning of the smaller intestines used for manufacture of sausages &c. is, of course, carried out in a separate place; but there is not room enough for this department of the work, and some of it is done in a very unsuitable locality. This is a grievance which has prevailed for two years or more, but it is said that better accommodation will be provided. The doors to enter the places where the intestines are cleaned out are very low, about 4 ft. high, and opposite there is a window of only 18 in. by 12 in. to create a through draught. Above the entrance door there is a large window that can be opened, and the room is lofty, but it is an altogether unsuitable structure: and it is just in this department of the work that the worst odours are produced, and yet here is the least ventilation. That the ventilation is bad is proved by the condensation produced on the walls, which is so considerable that I noticed an oilcloth suspended over a desk to keep the papers and accounts on it dry. This department of the trade, it appears, is suffering from over-production. Twelve metres of thoroughly cleaned intestine used to sell for 60 to 70 pfennigs, and now they are only worth 45 pfennigs.

Certainly the most remarkable feature about the Berlin slaughter-house is the extensive precautions taken to prevent the sale of diseased meat. There is an enormous pavilion which contains six divisions, and there are thirty-six persons employed in each division. Half are women and half are men, and all these persons are constantly engaged in the microscopic examination of samples, for the most part of pork. Forty-eight persons are engaged taking samples in the slaughter-house. Each sample is placed in a little tin box. The number on the tin box is written on the skin of the animal, and the books of the examiners show by the same number whether the meat is sound or otherwise. The samples are taken from four parts of the animal and six sections are cut from each of the four parts. The piece of glass on which these are placed is divided into twenty-four sections and is passed under the microscope. The charge made for allowing a pig to be slaughtered is 1·50 marks, and out of this 0·80 mark is for the examination. Of these 80 pfennigs, 25 pfennigs are taken to cover the general cost, and 55 pfennigs are paid to the microscopists. The women are paid at the same rate as the men; they are able to earn from 1500 marks to 1800 marks per annum. The chief difficulty, of course, is with regard to pigs. Though to slaughter large cattle, bullocks, &c, 1·90 marks are paid, only 50 pfennigs go for the examination. The fee for a calf is 50 pfennigs, and for a sheep 30 pfennigs, and in both these latter instances the cost for examining the meat is only 10 pfennigs. When there is anything suspicious about the meat it is immediately placed in what might be called a quarantine room. It often happens that as many as fifty carcases are placed here in a day. A policeman keeps jealous guard to see that none of the meat is taken away. The parts of these carcases that are most diseased are cut away, and the rest is put into a steam steriliser. Here a signal pyrometer notifies by an electric bell when 100° C. has been attained. The meat remains in that temperature for half an hour, and if in that time it is not cooked through the operation is renewed. The meat of eight bullocks—that is, about 600 lb. each—can be held in one of these steam sterilisers. They are very similar to the ordinary disinfecting stoves. The meat that has been thus treated is sold to poor people at from 30 pfennigs to 35 pfennigs per pound. Other meat is simply boiled for two hours and is then sold. The portions of the meat which are too diseased to be sold after sterilisation are put into large steam extractor stoves; steam under pressure of three and a half atmospheres is injected upon the meat, the fat and glue extracted, and the remains, which are dry and hard, are mixed with coal and used as fuel.

Altogether it may be said that the Berlin slaughter-house

is managed on a scientific basis, and that very great care is taken to protect the Berlin population from the danger of eating diseased meat. There are twenty fully qualified veterinary surgeons always on duty at the slaughter-house, as well as a large staff of inspectors in the various markets to watch the retail trade. Close to the public slaughter-house there are oil clarifying and albumen factories, so that all the industries, excepting leather dressing, that arise from the slaughtering of animals are carried out on the spot. Everything from the slaughter-house drains into the Berlin sewers, and, it is calculated, reaches the open fields in less than two hours.

Berlin, May 26th.

A CASE OF DEATH UNDER MR. LAWSON TAIT'S ANÆSTHETIC MIXTURE.

IN our issue for May 5th, under the heading of "Deaths under Anæsthetics," we referred to a case which occurred in Mr. Tait's private hospital at Birmingham. The unusual features of the case and the brevity of the report then in our hands led us to express the hope that we should later receive a fuller account. For this we have now to thank Mr. Charles F. Nassau, clinical assistant to Mr. Lawson Tait, who has sent us the following at Mr. Tait's direction. The case is interesting from the fact that death was undoubtedly due to failure of the action of the heart.

Mrs. ——, aged thirty-three years, married, was admitted to Mr. Lawson Tait's private hospital, April 24th, 1894, suffering from hæmorrhoids. Previous history: Eleven years ago patient was thrown from a dogcart, and, being pregnant, had as a consequence an abortion, accompanied by severe hæmorrhages. She never recovered completely, but was an invalid until she consulted Mr. Lawson Tait in October, 1884, who diagnosed double tubal trouble. Abdominal section was performed Oct. 6th, 1884, and the enormously swollen and firmly adherent tubes and ovaries were removed after a protracted and difficult operation. The pedicle on either side was transfixed and tied by the Stafford knot of twisted silk. Suture of the abdominal wound was effected in the usual manner by one set of silk sutures. Patient made an uninterrupted recovery and left the hospital on the twenty-first day. The anæsthetic used in this operation (a mixture of chloroform one part, ether two parts) was administered by Dr. Annie E. Clark by means of Clover's inhaler without any untoward effect whatever. Patient recovered perfect health, and reported to Mr. Tait from time to time to express her gratification with the result of the operation. History of present trouble: In April, 1894, she came to see him about advisability of having some hæmorrhoids operated upon. Examination of heart by stethoscope giving no contraindication, she entered the hospital the morning of April 24th, 1894, having had instructions as to preparation of bowels and her diet previously. Administration of the anæsthetic (chloroform one part, ether two parts) was begun by me at 1.30 P.M. by means of Clover's inhaler. The usual questions as to loose teeth and administration of former anæsthetic &c. being answered satisfactorily, index being at 0, I placed the inhaler lightly over her face, and then gradually turned the scale, keeping a careful watch over pulse, respiration, and conjunctival sensibility. There seemed to be no effect whatever from the anæsthetic except slight irritation of the nasal passages and inclination to cough, and at her request I once removed the inhaler to allow her to do so. She remained fully conscious. About five minutes after the indicator was removed to 3 on the scale, and after it had remained there for twenty or thirty seconds, the patient, breathing regularly and deeply, with a good strong pulse, suddenly made a remark of distress and became rigid, whereupon I promptly removed the inhaler, at the same time calling Mr. Tait's attention to the condition of the patient. Besides the remarkable rigidity of the body already noticed, a very prominent feature in the case was the intense cyanotic colour assumed by the face. Most careful and repeated examination of the great vessels and heart failed entirely to reveal any resumption of the circulation even for a moment; but during the brief pauses in our efforts at artificial respiration it was quite evident that she was making efforts to breathe for at least ten minutes after cardiac movement had completely ceased. The tongue was pulled well forward and the finger passed over the epiglottis to feel that it was clear. The performance of artificial respiration almost uninterruptedly for forty minutes, with occasional inversion of the body, injection of ether subcutaneously, and slapping of the chest and abdomen by wet towels, aided by inhalation of the vapour of aq. ammon., were without effect in restoring life.

A necropsy was performed twenty-seven hours after death by Mr. J. St. S. Wilders, and I can give his opinion in no better way than to quote his evidence before the coroner, Mr. O. Pemberton, as it appeared in the *Birmingham Gazette* of April 28th, 1894:—"Mr. J. St. S. Wilders said deceased's heart was wonderfully healthy, and no skilful person could tell that she was not able to safely take an anæsthetic. The vessels of the brain were very much congested, and death was due to cerebral coma. In his opinion the anæsthetic was administered in a proper manner." Having been present at the necropsy, and hoping that it may be of interest, I will give shortly the condition of the abdomen ten years after the performance of a complicated abdominal section. Externally a small scar, well nigh invisible, in the median line just above the pubes was all that remained. Internally peritoneum under abdominal incision was without scar. In fact, from the internal appearance, one could not say that the abdomen had ever been opened if there had not been a small piece of omentum adherent to the base of the bladder. This piece in course of time had almost detached itself from the main fold. Nowhere else in the abdominal cavity was there an adhesion of any kind. The uterus lay in its normal position. The stumps of the Fallopian tubes were about half an inch long with glistening cicatricial tips. The broad ligaments, except for a scooping out of the upper edges, were normal in appearance. Of the two silk ligatures there was not a trace. This case, I think, should go to prove that we need not fear, even in a case where there were numerous and firm adhesions at the time of operation, that they must of necessity readhere.

MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE conservator, Professor C. Stewart, has issued an annual report on the additions which have been made to the museum during the past year.

The great importance of a clinical record to accompany a pathological specimen is now so fully recognised that, with very few exceptions, no pathological preparation lacking a clinical history has been added during the year.

The amount of material sent for pathological investigation and report continues to increase, and now constitutes an important section of the routine work. The photographic camera and studio have been much employed for obtaining illustrations for lectures of normal and morbid anatomy, and the advantages thus afforded by the College have been duly appreciated.

In the additions to the pathological series the following may be mentioned: A very large dermoid cyst removed from the thigh (presented by Mr. J. W. Hulke). This was remarkable both for its size and its situation. A fenestrated skull of a fœtus. In this the vault of the skull was extensively occupied by sharply margined perforations, due probably to non-development of bone. Two cases of the bones of the knee-joint affected with hydatids. These were exhibited and described in Mr. Targett's lectures on hydatid disease of bone recently delivered at the College. Chronic arthritis of knee, regarded as syphilitic. In this specimen the condyles of the femur were much eroded, but there was no evidence of its syphilitic nature beyond the fact that the patient had had syphilis. A retroperitoneal hernia of the small intestine; the greater part of the jejunum and ileum were contained in a pouch, formed of peritoneum, lying behind and above the attachment of the mesentery. A large epithelioma of the bed of the nail of the thumb. A vesical calculus weighing thirty-four ounces and a half, successfully removed by supra-pubic cystotomy from an Egyptian fellah aged sixty by Mr. Milton of Cairo; it measured about six inches by four inches. A full account of the operation for its extraction will be found in THE LANCET of Sept. 16th, 1893. An ascaris lumbricoides which has passed through both the eyes of a dress-hook. A large

number of most interesting drawings and photographs have also been added.

In the series of comparative anatomy are many interesting additions, especially among the dissections, in which we may mention the dissections showing the nervous systems of the lobster (homarus vulgaris), crab (maia squinado), mussel (anodonta cygnea), scallop (pecten maximus), and snail (helix pomatia). Several specimens showed well modifications of the integuments for the purposes of concealment so as to resemble the objects on which the animals are situated, especially well seen in a crab (Parthenope horrida) in which the nodular and spinous surface of its shell closely resembles an encrusted and eroded stone.

Two good examples of symbiosis are shown; in one two specimens of ants from Guatemala (camponotus planatus and pseudomyrma belti), who have lost the habit of making nests and inhabit the naturally hollow spines (stipules) of acacia hindsii, entering by an opening which they make near the tip; the leaves of the plant furnish food for the ants, nectar glands on the main leaf stalk supplying carbohydrates, little yellow "food bodies" on the tip of some of the pinnæ of the leaf furnishing hydrocarbon as oil and proteid in the form of aleurone grains. In return for this hospitality the ants defend the plant from the attacks of other animals. The dissections of normal human anatomy are very fine, especially a dissection of the neck and part of the thorax from behind.

LOCAL GOVERNMENT BOARD FOR SCOTLAND.

WE have received from the Royal College of Physicians of Edinburgh the following memorial presented by them to Sir George Trevelyan, Secretary for Scotland, and conveying their approbation of the proposal of the Government to include a medical representative on the Local Board for Scotland:—

THE MEMORIAL OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

Humbly Sheweth,—

That your memorialists desire to express the satisfaction with which they regard the proposal of the Government to place a representative of the medical profession on the Local Government Board for Scotland proposed to be established by the Bill now before Parliament. That, in view of the fact that much of the work of the proposed Board will consist of duties relating to public health and other allied matters requiring medical knowledge, your memorialists deem it absolutely essential that a medical man, well versed in sanitation, should take part in its deliberations and should have a voice in directing its policy. That your memorialists learn with alarm that there is to be an attempt to deprive the Board of its medical element. They believe that if this attempt be successful it will inevitably have the effect of seriously restricting the usefulness of the Board.

Your memorialists therefore pray that the Government will adhere to the view embodied in the Bill.

In name and by authority of the Royal College of Physicians of Edinburgh. W. T. GAIRDNER, President.

July 6th, 1894.

CHOLERA.

SINCE our last report the epidemic manifestations of this disease have become more pronounced, especially in Russia. Twenty-one cases of cholera and 6 deaths occurred in St. Petersburg from the 1st to the 3rd inst. Telegraphic intelligence from that city of the 7th inst. states that during the past week 141 cases and 52 deaths had occurred in St. Petersburg, and 41 cases of cholera and 17 deaths at Cronstadt. At Warsaw 8 cases and 4 deaths were returned from June 24th to June 30th, with 30 cases and 21 deaths in the government of Warsaw during the same period; 20 cases and 8 deaths occurred in the government of Grodno, 68 cases and 30 deaths in that of Kielce, and 23 cases and 14 deaths in that of Radom. In the government of Ploczk there were 73 cases and 29 deaths from the 17th to the 23rd ult., and 20 cases and 1 death in the government of Tula. On the 7th inst. 39 fresh cases and 13 deaths, and on the 8th, 66 cases and 17 deaths were recorded at St. Petersburg. The disease seems to be confined to the poorer classes of the population. Cholera may be said, indeed, to have become epidemic in St. Petersburg and Cronstadt. The first case in Cronstadt was admitted to hospital on the 20th ult. The presence of comma bacilli was demonstrated in 17 of the first 19 cases that occurred there.

According to a telegram from Vienna from the special correspondent of the *Standard* the spread of cholera seems to be advancing in Galicia and Bukowina. Twenty cases, half of which were fatal, occurred in these two provinces in three days. In the district of Zaleszczyki, in Galicia, the same journal reports that 28 cases and 11 deaths from cholera occurred during the last two days.

There is no fresh news of importance from Berlin in regard to the disease, except that there have been 7 cases of cholera and 2 deaths in the Prussian part of the Vistula.

From Athens we learn that 8 cases and 2 deaths from cholera occurred in the village of Sparta, near Adalia, in Asia Minor.

As regards Belgium there has been an outbreak of choleraic diarrhœa and cholera at Liège, especially in the poorer quarters of the city; and the disease has appeared at Angleur, Jeysille, Sonmague, and other villages in the vicinity of Liège. The health of Antwerp is reported to be good, the death-rate at that place being below the average for this season of the year.

Five fresh cases of cholera—bringing up the total number to fifteen—have occurred on board the steamer *Dobeln* at the Fejan quarantine station, near Stockholm.

According to a Reuter's telegram an isolated but fatal case of choleraic diarrhœa was recently notified in Paris at a house on the Boulevard La Chapelle.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 5692 births and 3223 deaths were registered during the week ending July 7th. The annual rate of mortality in these towns, which had declined in the preceding six weeks from 17·7 to 15·5 per 1000, rose again last week to 16·1. In London the rate was 15·8 per 1000, while it averaged 16·3 in the thirty-two provincial towns. The lowest rates in these towns were 7·9 in Croydon, 9·6 in Leicester, 11·2 in Gateshead, and 12·3 in Norwich; the highest rates were 19·7 in Birkenhead, 20·3 in Blackburn, 20·5 in Liverpool, 20·7 in Oldham, and 23·6 in Salford. The 3223 deaths included 476 which were referred to the principal zymotic diseases, against 445 and 433 in the preceding two weeks; of these, 161 resulted from measles, 91 from diarrhœa, 85 from whooping-cough, 65 from diphtheria, 48 from scarlet fever, 21 from "fever" (principally enteric), and 5 from small-pox. No fatal case of any of these diseases was recorded in Brighton; in the other towns they caused the lowest rates in Newcastle-on-Tyne, Huddersfield, Plymouth, and Portsmouth, and the highest rates in Manchester, Birkenhead, Nottingham, Salford, and Wolverhampton. The greatest mortality from measles occurred in Bristol, West Ham, Salford, Sunderland, and Nottingham; from scarlet fever in Swansea and Wolverhampton; from whooping-cough in Derby, Sheffield, Cardiff, Nottingham, and Wolverhampton; and from diarrhœa in Leicester and Blackburn. The 65 deaths from diphtheria included 43 in London, 3 in Sheffield, and 3 in Birmingham. One fatal case of small-pox was registered in London, and 1 each in Liverpool, Manchester, Salford, and Halifax, but not one in any other of the thirty-three large towns. There were 109 small-pox patients under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 7th inst., against 204, 170, and 132 at the end of the preceding three weeks; 28 new cases were admitted during the week, against 21 and 16 in the preceding two weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2099, against 2195, 2153, and 2087 on the preceding three Saturdays;

266 new cases were admitted during the week, against 231 and 233 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 201 and 152 in the preceding two weeks, rose to 162 last week, but were 43 below the corrected average. The causes of 52, or 1·6 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Nottingham, Bradford, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Cardiff, Liverpool, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 16·6 and 16·9 per 1000 in the preceding two weeks, declined again to 15·9 during the week ending July 7th, and was slightly below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 10·3 in Perth and 11·8 in Paisley to 17·7 in Dundee and 19·2 in Greenock. The 454 deaths in these towns included 14 which were referred to whooping-cough, 9 to scarlet fever, 9 to diarrhœa, 7 to measles, 6 to diphtheria, 6 to "fever," and 4 to small-pox. In all, 55 deaths resulted from these principal zymotic diseases, against 58 and 61 in the preceding two weeks. These 55 deaths were equal to an annual rate of 1·9 per 1000, which was 0·5 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 18 and 20 in the preceding two weeks, declined again to 14 last week, of which 6 occurred in Glasgow and 4 in Edinburgh. The deaths referred to scarlet fever, which had increased from 3 to 10 in the preceding three weeks, declined again to 9 last week, and included 6 in Glasgow. The 7 fatal cases of measles were within 1 of the number in the preceding week, and included 4 in Dundee. The deaths referred to different forms of "fever," which had been 5 and 2 in the preceding two weeks, rose again to 6 last week, of which 4 occurred in Glasgow The 6 fatal cases of diphtheria showed a slight decline from the number in the preceding week, and included 5 in Glasgow. Of the 4 deaths from small-pox, 3 occurred in Edinburgh and 1 in Leith. The deaths referred to diseases of the respiratory organs in these towns, which had been 66 and 81 in the preceding two weeks, declined last week to 57, and were 30 below the number in the corresponding week of last year. The causes of 32, or more than 7 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the preceding three weeks from 24·6 to 20·3 per 1000, further fell to 17·6 during the week ending July 7th. During the thirteen weeks of the quarter ending on the 30th ult. the death-rate in the city averaged 23·4 per 1000, against 17·4 in London and 17·1 in Edinburgh. The 118 deaths registered in Dublin during the week under notice showed a decline of 18 from the number in the previous week, and included 5 which were referred to the principal zymotic diseases, against 9 and 10 in the preceding two weeks; of these, 4 resulted from diarrhœa, and 1 from whooping-cough, but not one from small-pox, measles, scarlet fever, diphtheria, or "fever." These 5 deaths were equal to an annual rate of 0·7 per 1000, the zymotic death-rate during the same period being 2·6 in London and 1·7 in Edinburgh. The 4 deaths referred to diarrhœa exceeded the number recorded in any recent week. The mortality from whooping-cough showed a further decline from that recorded in recent weeks. The 118 deaths in Dublin last week included 20 of infants under one year of age, and 31 of persons aged upwards of sixty years; the deaths of infants showed a further decline, while those of elderly persons slightly exceeded the number returned in the preceding week. Nine inquest cases and 10 deaths from violence were registered; and 36, or nearly a third, of the deaths occurred in public institutions. The causes of 10, or nearly 9 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JUNE, 1894.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during June in each of the forty-three sanitary districts of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases in the accompanying table was equal to 9·1 per 1000 of the population, estimated at 4,349,166 persons in the middle of this year. In the preceding two months the rates had been 10·2 and 9·6 per 1000. Among the various sanitary districts the rates were considerably below the average in Kensington, Hammersmith, Westminster, St. James Westminster, Stoke Newington, St. Martin-in-the-Fields, Strand, and St. Olave Southwark; while they showed the largest excess in Fulham, Bethnal Green, St. George-in-the-East, Limehouse, St. Saviour Southwark, Bermondsey, and Woolwich. The prevalence of small-pox in London showed a marked decline during June, an average of 26 cases weekly being notified, against numbers increasing from 15 to 46 in the preceding four months; of the 104 cases notified during last month, 28 belonged to Bethnal Green, 19 to Poplar, 14 to Islington, 7 to St. Pancras, 6 to Newington, and 6 to Plumstead sanitary areas. The Metropolitan Asylum Hospitals contained 123 small-pox patients at the end of June, against 56, 129, and 232 at the end of the preceding three months; the weekly admissions averaged 28, against 12, 38, and 60 in the preceding three months. The prevalence of scarlet fever in London showed a further decline from that recorded in recent months; this disease was proportionally most prevalent in Fulham, St. George Hanover-square, Hackney, St. Luke, St. George-in-the-East, Limehouse, St. Saviour Southwark, and Woolwich sanitary districts. The Metropolitan Asylum Hospitals contained 2042 scarlet fever patients at the end of June, against 2070, 2182, and 2216 at the end of the preceding three months; the weekly admissions averaged 235, against 255 and 237 in the preceding two months. Diphtheria also showed slightly decreasing prevalence during the month under notice; among the various sanitary districts this disease showed the highest proportional prevalence in Fulham, Chelsea, Bethnal Green, St. George-in-the-East, Limehouse, Poplar, St. George Southwark, and Bermondsey. There were 351 cases of diphtheria under treatment in the Metropolitan Asylum Hospitals at the end of June, against 307, 316, and 330 at the end of the preceding three months; the weekly admissions averaged 79, against 67 in each of the preceding two months. The prevalence of enteric fever showed a very slight increase during last month; among the various sanitary districts this disease was proportionally most prevalent in Chelsea, Clerkenwell, Bethnal Green, Limehouse, and Greenwich. Erysipelas showed the highest proportional prevalence in St. Pancras, St. Giles, Holborn, St. Luke, and Poplar sanitary districts. Three cases of puerperal fever were notified in St. Pancras, and 2 each in Clerkenwell, Shoreditch, Wandsworth, and Lewisham sanitary districts.

The mortality statistics in the accompanying table relate to the deaths of persons actually belonging to the various sanitary districts, the deaths occurring in the institutions of London having been distributed among the various sanitary districts in which the patients had previously resided. The distribution of these deaths, especially of those resulting from zymotic diseases, affords the most trustworthy data upon which to calculate reliable rates of mortality. During the four weeks ending Saturday, June 30th, the deaths of 5222 persons belonging to London were registered, equal to an annual rate of 15·7 per 1000, against 18·4 and 16·9 in the preceding two months. The lowest death-rates during June in the various sanitary districts were 7·9 in Plumstead, 9·4 in St. James Westminster, 9·5 in Stoke Newington, 9·6 in Lee, 10·2 in Hampstead, and 10·4 in Lewisham (excluding Penge); the highest rates were 21·2 in Clerkenwell and in St. Luke, 22·1 in St. Olave Southwark, 22·4 in St. George-in-the-East, 23·8 in Limehouse, 24·7 in St. George Southwark, and 25·3 in Strand. During the four weeks of June 937 deaths were referred to the principal zymotic diseases in London; of these, 8 resulted from small-pox, 481 from measles, 73 from scarlet fever, 177 from diphtheria, 115 from whooping-cough, 42 from different forms of "fever" (including 38 from enteric fever and 4 from simple and ill-defined forms of fever), and 41 from diarrhœa. These 937 deaths were equal to an annual rate of 2·8 per 1000, against 2·9, 3·4, and 3·6 in the preceding three months. No fatal case of any of these diseases was recorded in Stoke Newington; in the other districts they caused the lowest rates in St. George Hanover-

MONTHLY ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON—JUNE, 1894.

(Specially compiled for THE LANCET.)

Sanitary areas.	Estimated population in the middle of 1894.	Notified Cases of Infectious Disease.										Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,319,166	104	1437	832	2	169	13	20	453	1	3031	9·1	8	461	73	177	115	—	38	4	41	957	2·8	5222	15·7	116
West Districts.																										
Paddington	121,583	—	23	23	—	5	1	1	13	—	66	7·1	—	18	1	10	4	—	1	—	1	35	3·8	138	14·8	135
Kensington	167,350	—	18	19	—	5	1	—	20	—	63	4·9	—	16	—	3	2	—	—	—	1	22	1·7	172	13·4	131
Hammersmith	105,696	—	22	10	—	1	1	—	7	—	41	5·1	—	14	1	4	2	—	2	—	—	23	2·8	128	15·8	104
Fulham	110,993	—	54	38	—	4	—	—	10	—	106	12·5	—	13	5	10	3	—	—	—	3	34	4·0	132	15·5	108
Chelsea	99,052	2	40	24	—	7	—	1	10	—	84	11·1	—	20	4	3	5	—	—	1	4	37	4·9	131	17·2	110
St. George Hanover-square	75,033	1	33	8	—	1	—	—	5	—	48	8·3	—	2	1	—	—	—	—	—	—	3	0·5	82	14·2	80
Westminster	54,414	—	12	1	—	3	—	—	3	—	19	4·6	—	3	—	—	—	—	—	—	1	4	1·0	76	18·7	42
St. James Westminster	23,571	1	1	1	—	1	—	—	1	—	5	2·8	—	1	—	—	1	—	1	—	—	3	1·7	17	9·4	31
North Districts.																										
Marylebone	138,554	1	49	24	—	4	1	—	13	—	92	8·7	—	11	1	8	5	—	2	—	—	27	2·5	202	19·0	127
Hampstead	75,443	2	30	3	—	—	—	—	1	—	36	6·2	—	3	2	1	1	—	—	—	—	7	1·2	59	10·2	67
St. Pancras	233,739	7	106	38	—	12	—	3	43	—	209	11·7	1	20	2	5	8	—	1	—	—	37	2·1	290	16·2	116
Islington	331,900	14	95	57	—	16	—	1	30	—	213	8·4	—	32	2	19	10	—	3	—	4	70	2·7	351	13·8	101
Stoke Newington	34,172	—	7	4	—	2	—	—	—	—	13	5·0	—	—	—	—	—	—	—	—	—	—	—	25	9·5	38
Hackney	211,493	—	85	29	—	7	—	1	14	—	136	8·4	—	18	4	7	3	—	—	—	—	32	2·0	221	13·6	100
Central Districts.																										
St. Giles	38,144	—	4	4	—	2	—	—	7	—	17	5·8	—	4	—	1	2	—	—	—	—	7	2·4	47	16·1	50
St. Martin-in-the-Fields	13,783	—	4	—	—	—	—	—	2	—	6	5·7	—	—	—	—	—	—	—	—	1	1	0·9	20	18·9	200
Strand	23,179	—	5	2	—	1	—	—	—	—	8	4·5	—	5	—	—	1	—	1	—	—	7	3·9	45	25·3	242
Holborn	32,438	3	5	6	—	2	—	—	7	—	23	9·2	—	1	—	2	3	—	3	—	—	9	3·6	41	16·5	100
Clerkenwell	65,312	—	19	11	—	4	—	2	8	—	44	*8·8	—	11	—	5	3	—	—	—	—	19	3·8	106	21·2	138
St. Luke	41,168	—	22	3	—	1	1	—	7	—	34	10·8	—	—	1	—	—	—	—	—	—	1	0·3	67	21·2	130
City of London	34,632	—	12	4	—	1	—	—	3	—	20	7·5	—	—	—	—	1	—	—	—	—	1	0·4	45	16·8	119
East Districts.																										
Shoreditch	123,186	3	43	18	—	3	1	2	17	—	87	9·2	—	8	5	5	3	—	1	—	1	23	2·4	180	19·0	121
Bethnal Green	129,840	23	27	53	1	14	1	1	16	—	141	14·2	3	23	3	11	4	—	7	—	—	51	5·1	195	19·6	120
Whitechapel	75,498	—	26	10	—	1	—	1	6	—	44	7·6	—	12	—	5	2	—	—	—	1	20	3·5	101	17·4	117
St. George-in-the-East	45,360	—	23	21	—	1	—	1	4	—	50	14·4	—	5	1	8	2	—	1	—	1	18	5·2	78	22·4	133
Limehouse	57,000	—	39	19	—	5	—	—	3	—	66	15·1	—	14	5	3	—	—	—	—	—	22	5·0	104	23·8	225
Mile End Old Town	108,242	4	33	25	—	3	—	—	9	—	74	8·9	—	16	3	4	7	—	—	1	5	36	4·3	153	18·4	134
Poplar	170,217	19	56	45	—	9	—	—	28	—	157	12·0	2	34	6	2	—	—	3	—	2	49	3·8	208	15·9	126
South Districts.																										
St. Saviour Southwark	26,712	—	12	5	—	1	—	—	4	—	22	10·7	—	2	—	1	—	—	—	—	—	3	1·5	35	17·1	116
St. George Southwark	60,060	—	22	27	—	4	—	—	7	—	60	13·0	—	12	2	5	2	—	1	—	2	24	5·2	114	24·7	174
Newington	118,512	6	37	20	—	3	—	—	15	—	81	8·9	1	10	4	5	1	—	1	—	1	23	2·5	149	16·4	104
St. Olave Southwark	12,984	—	—	—	—	—	—	—	—	—	—	—	—	5	—	—	—	—	—	—	—	5	5·0	22	22·1	138
Bermondsey	84,053	—	31	38	—	1	—	—	7	—	77	11·9	—	10	3	8	2	—	—	—	1	22	3·4	120	18·6	138
Rotherhithe	40,365	1	11	12	—	3	1	—	6	—	34	11·0	—	5	—	4	2	—	—	—	1	12	3·9	52	16·8	149
Lambeth	282,574	2	82	41	1	8	4	—	31	1	170	7·8	—	26	3	3	7	—	1	—	7	47	2·2	337	15·5	113
Battersea	161,558	1	52	43	—	6	—	—	17	—	119	9·6	1	25	1	5	8	—	3	—	2	45	3·6	175	14·1	129
Wandsworth	179,518	—	42	21	—	6	1	2	20	—	92	6·7	—	18	1	4	3	—	—	2	—	28	2·0	150	10·9	94
Camberwell	248,893	—	78	56	—	6	—	—	27	—	167	8·7	—	41	5	14	16	—	1	—	2	79	4·1	310	16·2	141
Greenwich	173,128	1	72	36	—	9	—	1	18	—	137	10·3	—	15	3	4	2	—	2	—	—	26	2·0	161	12·1	96
Lewisham (excluding Penge)	79,903	1	18	13	—	1	—	2	5	—	40	6·5	—	7	—	3	1	—	1	—	—	12	2·0	64	10·4	127
Woolwich	42,309	—	50	5	—	2	—	—	—	—	57	17·6	—	1	2	2	—	—	1	—	—	6	1·8	53	16·3	115
Lee	38,172	—	13	5	—	2	—	—	2	—	22	7·5	—	—	—	2	—	—	—	—	—	2	0·7	28	9·6	28
Plumstead	59,233	6	24	9	—	2	—	1	6	—	48	10·6	—	—	2	1	1	—	1	—	—	5	1·1	36	7·9	65
Port of London	—	1	—	1	—	—	—	—	1	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 32 cases of membranous croup.

† Including deaths from membranous croup.

square, Westminster, St. Martin-in-the-Fields, St. Luke, City of London, and Lee; and the highest rates in Bethnal Green, St. George-in-the-East, Limehouse, Mile End Old Town, St. George Southwark, and St. Olave Southwark. Eight fatal cases of small-pox were registered in London during the month under notice, the corrected average in the corresponding periods of the preceding ten years being 27; of these 8 deaths, 3 belonged to Bethnal Green, 2 to Poplar, and 1 each to St. Pancras, Newington, and Battersea sanitary districts. The 481 deaths referred to measles exceeded by as many as 215 the corrected average number; among the various sanitary districts this disease showed the highest proportional fatality in Chelsea, Strand, Bethnal Green, Whitechapel, Limehouse, Poplar, and St. George Southwark. The 73 fatal cases of scarlet fever almost corresponded with the corrected average number; this disease was proportionally most fatal in Fulham, Shoreditch, Limehouse, and Woolwich sanitary districts. The 177 deaths referred to diphtheria were 72 above the corrected average; among the various sanitary districts this disease showed the highest proportional fatality in Fulham, Clerkenwell, Bethnal Green, St. George-in-the-East, St. George Southwark, Bermondsey, and Rotherhithe. The 115 fatal cases of whooping-cough were little more than half the corrected average; this disease was proportionally most fatal in Holborn, Mile End Old Town, and Camberwell sanitary districts. The 38 deaths referred to enteric fever were slightly below the corrected average; the largest excess of "fever" mortality was recorded in Holborn and Bethnal Green sanitary districts. The 41 fatal cases of diarrhœa were less than a fourth of the corrected average owing to the low temperature which prevailed during June. In conclusion, it may be stated that the mortality in London during the month under notice from these principal zymotic diseases exceeded the average by rather more than 5 per cent. owing principally to the excessive fatality of measles.

Infant mortality in London during June, measured by the proportion of deaths under one year of age to registered births, was equal to 116 per 1000, and was considerably below the average owing to the comparative absence of summer diarrhœa; the lowest rates were recorded in Westminster, St. James Westminster, Hampstead, Stoke Newington, St. Giles, Lee, and Plumstead; and the highest rates in St. Martin-in-the-Fields, Strand, Clerkenwell, Limehouse, St. George Southwark, St. Olave Southwark, Bermondsey, and Rotherhithe sanitary districts.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-COLONEL CATHERWOOD has been posted to Aldershot, and Surgeon-Major Stevenson to Manchester. The following officers have rejoined at Chester from Aldershot: Surgeon-Lieutenant-Colonel Leake, Surgeon-Captain Lavie, and Surgeon-Lieutenant Keble. Brigade-Surgeon-Lieutenant-Colonel McNalty, retired pay, has been appointed Medical Examiner of Recruits in London, in succession to Brigade-Surgeon Gribbon, retired pay, deceased. Surgeon-Captain Holyoake has arrived from India on sick leave, and Surgeon-Captain Lane has joined the Eastern District for duty. Surgeon-Captain Bailey has returned from the Cape on completion of a tour of service, and Surgeon-Captain Russell has joined at the Curragh. The following officers proceed in the *Tamar* to carry out reliefs: Surgeon-Lieutenant-Colonel Fraser and Surgeon-Captain Butterworth, at Mauritius; Surgeon-Lieutenant-Colonel Dwyer and Surgeon-Captains Bruce, Tuke, and Squire, at the Cape. Surgeon-Captain Caldwell has embarked for St. Helena. This is an augmentation of the Medical Staff of the island, where hitherto there has been but one medical officer. Surgeon-Major Irwin has been granted leave from Gibraltar and Surgeon-Captain Dalton from Burma. Leave of absence from Netley has been granted to Surgeon-Lieutenant Fleury from the 10th inst. to Aug. 7th.

INDIAN MEDICAL SERVICE.

Surgeon-Major G. S. A. Ranking (Bengal) is appointed to be Secretary to the Board of Examiners. Surgeon-Colonel J. G. Pilcher (Bengal), at present officiating as Inspector-General of Civil Hospitals, North-West Provinces and Oudh, is confirmed in that appointment, vice Surgeon-Colonel J. Richardson, retired from the service. Surgeon-Colonel F. Harvey (Bengal), at present officiating as Inspector-General of Civil Hospitals, Bengal, is confirmed in that appointment, vice Surgeon-Colonel J. G. Pilcher.—*Volunteer Corps:* The following Volunteer Medical Officers are appointed Surgeon-Lieutenant-Colonels:—Central Bengal Light Horse: Surgeon-Lieutenant Charles John Walford Meadows (Surgeon-Lieutenant-Colonel, I.M.S.). Dehra Dun Mounted Rifles: Honorary Surgeon Edward Butler Ruttledge (Surgeon-Lieutenant-Colonel, I.M.S.). Chota Naghpur Mounted Rifles: Surgeon-Lieutenant Frederick Robert Swaine (Surgeon-Lieutenant-Colonel I.M.S.). Orissa Volunteer Rifle Corps: Honorary Surgeon John Manuk Zorab (Surgeon-Lieutenant-Colonel, I.M.S).—To be Surgeon-Majors: Ghazipur Light Horse: Honorary Surgeon Arthur Robert Wyatt Sedgefield (Surgeon-Major, I.M.S.). Gorakhpur Light Horse: Honorary Surgeon James Moran (Surgeon-Major, I.M.S). 5th Administrative Battalion, North-Western Provinces, Volunteers: Surgeon-Lieutenant James Armstrong (Surgeon-Major, I.M.S.). Oudh Volunteer Rifle Corps: Honorary Surgeon William Deane (Surgeon-Major, I.M.S.). Ghazipur Volunteer Rifle Corps: Honorary Surgeon James Farquharson Maclaren (Surgeon-Major, I.M.S.). Midland Railway Volunteer Rifles: Honorary Surgeon Geo. Michael Dixon (Surgeon-Major, I.M.S.).—To be Surgeon-Captains: Ghazipur Light Horse: Honorary Surgeon William George Patrick Alpin (Surgeon-Captain, I.M.S.). Agra Volunteer Rifle Corps: Honorary Surgeon Charles Mactaggart (Surgeon-Captain, I.M.S.).—To be Surgeon-Lieutenants: Nagpur Volunteer Rifle Corps: Surgeon-Major George Francis Angelo Harris, I.M.S., to be Surgeon-Major. Naini Tal Volunteer Rifle Corps: Surgeon-Major William Hotson Cadge, I.M.S., to be Surgeon-Major, to complete the establishment.

NAVAL MEDICAL SERVICES.

The following appointments are notified at the Admiralty:—Surgeons and Agents: W. H. Longhead, M.B., at Donnanook and N. Cotes; J. Dunlop, at Port Ballinlay; J. M. Fogarty, M.B., at Torr Head; G. M. O'Connor, at Bally Castle; J. T. Cheves, at Cawsand; and D. Lamond, at Allapool.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Andrew K. Rickards having resigned his Volunteer appointment, ceases to be an officer of the Army Medical Reserve of Officers.

MILITIA MEDICAL STAFF.

Surgeon-Lieutenant-Colonel W. K. Curtis, 3rd Battalion, the Buffs (East Kent Regiment), resigns his commission; is permitted to retain his rank, and to wear the prescribed uniform on his retirement. Surgeon-Lieutenant-Colonel J. Parks, 3rd and 4th Battalions, the Lancashire Fusiliers, resigns his commission; also is permitted to retain his rank and to wear the prescribed uniform on his retirement.

VOLUNTEER CORPS.

Light Horse: 1st Fifeshire: Surgeon-Captain W. Stuart Palm, M.B., from the 6th (Fifeshire) Volunteer Battalion, the Royal Highlanders, to be Surgeon-Captain.—*Artillery:* 8th Lancashire: William McClelland, M.B., to be Surgeon-Lieutenant.—6th Lancashire: Surgeon-Captain J. B. Oliver to be Surgeon-Major.—1st Monmouthshire: Walter Evelyn James, Gent., to be Surgeon-Lieutenant.—*Rifle:* 3rd Volunteer Battalion, the Devonshire Regiment: Honorary Assistant Surgeon E. Nason resigns his commission.—1st Volunteer Battalion, the Cheshire Regiment: William Edward Ramsden Wood, M.D., to be Surgeon-Lieutenant.—2nd Volunteer Battalion, the Worcestershire Regiment: Surgeon-Captain A. C. Keep, M.D., resigns his commission.—2nd Volunteeer Battalion, the East Lancs. Regiment: Surgeon-Captain W. J. Stott resigns his commission; is permitted to retain his rank, and to continue to wear the uniform of the Battalion on his retirement.—3rd (Dumfries) Volunteer Battalion, the King's Own Scottish Borderers: William Murdoch, M.D., to be Surgeon-Lieutenant.—3rd (Duke of Connaught's Own) Volunteer Battalion, the Hampshire Regiment: Surgeon-Lieutenant J. Malpas to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The Glasgow Companies: The undermentioned Surgeon-Lieutenants to be Surgeon-Captains: J. McGregor Robertson, M.B., W. F. Somerville, M.D., and A. Moyes, M.B.

SCARLET FEVER ON BOARD H.M.S. "HOTSPUR."

The naval authorities appear to have considerable difficulty in controlling the outbreak of scarlet fever which occurred

recently on board H.M.S. *Thunderer*. It will be remembered that in order to as far as possible cut short the outbreak those members of the crew who manifested no symptoms of illness were transferred to the *Hotspur*, and the *Thunderer* was disinfected. Unfortunately cases still continue to occur on the *Hotspur*, and attempts are now being made to check the spread of the disease by distributing the crew between the *Banterer* and the *Grappler*, two gunboats attached to the Medway Fleet Reserve.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on the 10th inst., Inspector-General T. Russel Pickthorn in the chair, the sum of £69 was distributed among the several applicants.

INSANITARY BARRACKS.

During the recent discussion in the House of Commons on the Army Estimates Mr. Campbell-Bannerman stated that the drainage at Aldershot was about thirty years old, and required remodelling, which would be shortly undertaken. Steps had already been taken to improve the sanitation of Wellington Barracks. The Department was also effecting improvements in various other barracks as rapidly as possible.

SWIMMING INSTRUCTION IN THE SERVICES.

The order lately issued by the Admiralty for the formation of swimming classes in connexion with the Sheerness School of Gunnery is a step in the right direction. The art of natation is too much neglected in the services, yet it would not be difficult, as has been done in the case of Sheerness, to make arrangements with the proprietors of local baths by which instruction in this useful art could be imparted to our soldiers in most of our large garrison towns.

On July 4th Surgeon-Lieutenant O'Connor and about seventy non-commissioned officers and men of the Militia Medical Staff Corps arrived at Netley for about a month's training. They are daily engaged in company and stretcher drill, and are receiving instruction in the wards of the Royal Victoria Hospital.

Brigade-Surgeon-Lieutenant-Colonel Notter will represent the Medical Service of the Army at the International Congress on Hygiene and Demography which will meet in September at Budapest.

Notification has been received from the Principal Medical Officer, Malta, that seven invalids left on the 24th ult. in the P. and O. steamship *Arcadia*.

Correspondence.

"Audi alteram partem."

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—During the last three or four days the new preparations which have been added to the museum of the Royal College of Surgeons of England have been, according to custom, on view in the council room of that institution, and my purpose in this letter is to call the attention of all whom it may concern (and in truth whom does it not concern?) to some of the most exquisite dissections which, so far as I know, have ever been seen. They consist of a series of specimens in illustration of the anatomy of some of the invertebrata. To quote from the report of the conservator: "Amongst the additions to the museum I may mention a beautiful series of dissections displaying the anatomy of the nervous system in some of the lower forms of animals made by Mr. Burne; each preparation shows the relation of the nervous system to other structures, whilst an isolated system shows more clearly the ganglia with their commissuræ, cords, and nerves." Familiar as those who visit our museum must be with the splendid work of Professor Stewart and Mr. Pearson, no one, I imagine, can examine these delicate specimens without surprise and delight. Even apart from the knowledge they unfold they cannot be regarded simply as works of art without admiration of the skill they display. The plan now adopted at the College of voting by proxy papers is not without grave disadvantages, and among the chief of these I venture to reckon the loss to many that it allows of a periodical visit to the College and of the pleasure and instruction to be derived from the treasures of the museum.

I am, Sirs, yours truly,

Brook-street, W., July 6th, 1894. WM. SAVORY.

THE CAUSE OF THE INCREASE OF MORTALITY FROM DIPHTHERIA IN LONDON.

To the Editors of THE LANCET.

SIRS,—Dr. J. F. J. Sykes, the medical officer of health of St. Pancras, has recently published a very interesting report on the above subject, in accordance with the instructions of his health committee. His report is worthy of high commendation, and I think he has established beyond cavil his main contenion, that "the great rise in the mortality from diphtheria corresponds with a great fall in that from other throat diseases." But, owing to the unfortunate time selected for the termination of the inquiry—namely, the close of 1891—he certainly is wrong in the first of his conclusions, "that a slight diminution is taking place in the death-rate from throat diseases taken as a whole." The death-rate from diphtheria alone was higher in 1893 than that from all throat diseases taken together in any of the previous twelve years. No doubt cases are now diagnosed (and notified) as diphtheria which were formerly attributed (whether rightly or wrongly I will not say) to other throat affections, but it is beyond a doubt that, in London at least, the Notification Act has been powerless to curtail the mortality from throat diseases, whether diphtheritic or otherwise. The following is an extension of Dr. Sykes' table:—

London: Death-rates per 100,000,000 living.

Year.	Diphtheria.	Diseases of throat other than diphtheria.	Total diseases of throat.
1881	172	321	493
1882	222	379	600
1883	244	366	610
1884	241	341	582
1885	227	300	527
1886	212	254	466
1887	235	278	513
1888	319	236	555
1889	391	216	607
1890	331	237	568
1891	340	177	518
1892	440	146	586
1893	758	Data not published	Unknown

I am, Sirs, yours faithfully,

Kingston-on-Thames, June 27th, 1894. D. BIDDLE.

*** Mr. Biddle also appends to his letter a diagram in illustration of his statement that the death-rate from diphtheria alone in 1893 was higher than the death-rate from all other throat affections taken together for the previous twelve years.—ED. L.

THE CARE AND TREATMENT OF IDIOTS

To the Editors of THE LANCET.

SIRS,—Some time ago I made an endeavour to compute the number of idiots treated (?) in their own homes, and was considerably surprised to find that there must be something like 70,000 in the United Kingdom. The ordinary census return could only be regarded as unreliable, seeing that the most typical idiot is rarely recognised as such by his own family. I arrived at the above figures by ascertaining the number of idiots in certain districts and comparing the same with the population. This rough calculation was near enough the mark to illustrate what I wish to point out—the existence of a social canker—a lost and neglected army of creatures, blighting and demoralising the homes of thousands.

The idiot often belongs to a large family and is always strongly in evidence, as in the smallest house he occupies the most comfortable corner. In joyful moments he hugs himself, shouts and croons, rocking his body to and fro, and shaking his head vigorously. He habitually sucks his pallid fingers whilst the saliva trickles down and saturates his clothing. At other times the idiot indulges his peevish passion, shouting, spitting, kicking, and doing as much damage as his strength will permit; during the night his condition and habits are equally trying. This brief picture, so well known to medical men, plainly shows what an amount of discomfort and ignorance exists, and it is high time that something was done to remedy a state of things disgraceful to our modern civilisation. The existence of an idiot in a cottage and in the majority of larger dwellings, treated casually as a member of the family, gives rise to the following evils:—(1) An insanitary house; (2) an insanitary human being, spoiled, neglected, and uneducated, where education is of the first importance; (3) bad moral effect on family and associates. Under the present system, when an idiot gets to a certain age and becomes unmanageable, he is certified and sent to a lunatic asylum, where he is a most unwelcome visitor, and where he usually ends his days. The workhouses and asylums are as ill-fitted for such cases as their own homes, as they contain no special provision for their education or physical and mental development. The asylums specially devoted to idiots are becoming better managed year by year, and their records give the most gratifying results; but such institutions are not only kept filled up, but are also often hampered by lack of funds in carrying out to the full extent the modern system of education and treatment which has proved so beneficial. In a word we have on our hands 75 000 idiots lost and unprovided for. How is this to be remedied? Is it a question for the Commissioners in Lunacy, the Education Department, or the county councils? At any rate there is no denying what is urgently needed. If we are to draw this lost population from their homes we must provide large schools for their reception. Asylum is a misnomer if we go with the times. Derelict farms might be utilised; plenty of space is required, for the idiot ought to spend as much time as possible in the open air. Well adapted schools, properly managed, would be readily filled without any compulsory act, and such a system would have its effect upon the well-being and education of others treated at home. If the idiots were all notified by the district medical officers, cases could be kept under some supervision, or sent into the schools at an early age, when the training would be more valuable and effective. It is always hard for parents to part with a child, but I have often noticed the sense of relief that follows upon the removal of the family blight, even when sent to a pauper asylum. The microbe-laden atmosphere becomes cleared once more, and the family can enjoy the comforts of home so essential to their well-being and moral rectitude.

I am, Sirs, yours truly,

Hallbeach, May 23th, 1894. THOS. JACKSON, L.R.C.S. Edin.

"THE LOSS OF LIFE FROM PREVENTABLE DISEASE."

To the Editors of THE LANCET.

SIRS,—Your correspondent Dr. Kenwood, in his letter in THE LANCET of June 30th, points out that the two main obstacles to a satisfactory result from the notification of whooping-cough would be the difficulty of arranging hospital nursing and accommodation for the young sufferers. I incline to the opinion that the compulsory isolation by remaining in-doors, apart from hospital treatment, would have the effect of limiting the diffusion of the disease, and notification that of teaching the parents that the malady is not of a trivial and inevitable nature. There are few, I think, who will not be disposed to consider that some line of action should be adopted with regard to the very prevalent practice of allowing those suffering from the disease in a well-marked form to frequent places of worship, and that not least schools, and to travel in public conveyances of various kinds. I have seen children coming out of school struggling in the throes of severe spasms surrounded by a semicircle of curious and sympathetic scholars. It is the early exposure, as Dr. Oliver Barber says in his letter, which produces the complications, the result of the mistaken idea as to the value of out-door air with all its vicissitudes. I think the disease is spread not so much by young children as by older ones, who are allowed to run out and play freely with healthy children, and that, as Dr. Barber remarks, the notification and compulsory isolation, necessitating the patient remaining indoors, would have the effect of not only limiting the spread of the disease but also of reducing the mortality, the largest of all the zymotic class.

I am, Sirs, yours truly,

St. Leonards, July 9th, 1894. EDWARD SAMUEL LEE, M.D.

"THE MALIGNANT TRANSFORMATION OF BENIGN LARYNGEAL TUMOURS AS A CONSEQUENCE OF ENDO-LARYNGEAL OPERATIONS."

To the Editors of THE LANCET.

SIRS,—Dr. Newman, in his reply, dwells only on one point contained in his first letter—namely, a complaint that in abstracting a report of one of his cases I substituted a word which, in his opinion, entirely altered his meaning. In my rejoinder I gave reasons why I considered that substitution unimportant, but since he still feels it a grievance I have no longer hesitation in expressing my regret that it was done, at the same time begging him to believe that it was entirely unintentional; it was also unnecessary, since my case needed no such device to strengthen my argument. But Dr. Newman gravely mis-states the position in claiming that this paltry personal question is the real point at issue, for in concluding his first letter of June 16th Dr. Newman wished to insist on three points, all of which he now finds it convenient to ignore. The points were: first, that I have entirely failed to prove that a benign growth is likely to undergo malignant transformation as a consequence of intra-laryngeal interference; secondly, that I have no right to claim him as an adherent of the opinions expressed by me; and, thirdly, that the facts *as published by authors* (himself, to wit) are not consistent with the theory which I try to demonstrate. I replied by quoting three cases related by Dr. Newman in 1886, to illustrate his belief that a benign growth may undergo malignant transformation; and considering that in each of these cases the transformation took place *during* the course of surgical treatment, and that it is *manifestly impossible* to demonstrate such transformation except by examination of portions surgically removed at different periods, it is surprising that the editors of the *Glasgow Medical Journal* have not discovered in Dr. Newman's writings a single word favouring the idea that he ever believed that instrumental interference is an element in producing such transformation. For, on the other hand, Dr. Newman teaches that a cancer, so dormant as to give not the least suspicion of malignancy on examination of a first and even of a second removed portion by a method than which in his opinion none is more certain for the purpose of arriving at an early and reliable diagnosis, can be aroused into active malignancy by surgical interference. Dr. Newman has accused me of altering his words to suit my own ends. When Dr. Newman can reconcile these two positions we shall all know what he really does mean, and then, and then only, will you, Sirs, be able to answer his appeal for a judicial decision, and that on a wider and more scientific basis. In the meantime, I venture to repeat that I feel myself justified in having claimed Dr. Newman as a *quondam* adherent to my views and as an author whose published facts are consistent with the theory I have tried to demonstrate.

I am, Sirs, yours faithfully,

LENNOX BROWNE.

Mansfield-street, W., July 9th, 1894.

*** The matters in dispute between Dr. Newman and Mr. Lennox Browne have been much simplified by Mr. Browne's last letter to us. It will be seen that he expresses regret for substituting one word for another in quoting or abstracting a report of one of Dr. Newman's cases. We highly approve of this apology, and only regret that it did not come sooner. It is always incumbent in public controversy, in quoting an author, to do so with absolute accuracy, using only the *ipsissima verba;* half the misunderstandings which occur between public men arise from the neglect of this obvious rule. The rule is, of course, most binding in matters so grave as that of surgical interference in cases of intra-laryngeal growth. It is

quite open to Mr. Browne to argue in favour of his views from the published cases of Dr. Newman or any other laryngologist, but he does not advance his argument by misquoting the statements of those whom he criticises. We are not called upon on this occasion to express an opinion on one of the most serious and urgent questions of surgery which has been projected into prominence by historical events and controversies of recent years. If such a correspondence as that we have published settles anything it settles this:—that even from an expert's view there is much difficulty in defining the course of professional duty in any given case, and that in any given case much responsibility will rest on the general advisers of the patient. We cannot devote further space to this correspondence.—ED. L.

"SOME COMMON SOURCES OF ERROR IN TESTING FOR SUGAR IN THE URINE."

To the Editors of THE LANCET.

SIRS,—In the communication from Sir George Johnson contained in your last issue it is asserted that no sugar is present in healthy urine. With reference to this assertion I ask to be permitted to submit to Sir George Johnson the following question: How is the production of the osazone crystals obtainable with the greatest facility from the healthy urine of the human subject and from the urine of the lower animals to be accounted for?

I am, Sirs, yours faithfully,

Grosvenor-street, July 10th, 1894. F. W. PAVY.

"TIC DOULOUREUX AND ELECTRICITY."

To the Editors of THE LANCET.

SIRS,—The letter of Dr. Althaus[1] lends support to the contention that in cases of trigeminal neuralgia surgical interference ought, as a rule, to be withheld until electrical treatment has been duly tried. The long-continued application of very weak continuous currents, as advocated by Dr. Althaus, is a proceeding of recognised value, and had the more rapid expedient failed it would doubtless have been proper in the case quoted[2] to persevere in the use of other and slower methods. By a sublime effort of faith and patience the application of the fractional part of a milliampère of continuous current for an hour a day during a period of three successive weeks might even have been carried out. It is, however, to avoid such a necessity that I venture to suggest a trial of this quicker procedure when the current in question is available and the medical man knows how to handle it. In gauging the relative merits of various methods it is not to be forgotten that a course of treatment extending over a period of three weeks allows to come into play so many other possible factors in the process of cure that it becomes proportionately difficult to distinguish the exact relationship of cause and effect. This can scarcely be mistaken in the case referred to. It is cited as an instance in which the results of a single electrisation are certainly not less striking, and possibly not less permanent, than those claimed for one of the most difficult operations known to surgery. I am, Sirs, yours faithfully,

Brighton, July 10th, 1894. W. S. HEDLEY, M.D.

"THE AERIAL CONVECTION OF SMALL-POX."

To the Editors of THE LANCET.

SIRS,—In an annotation upon the aerial convection of small-pox, which appeared in last week's issue of THE LANCET, you commented upon some views which I, as late Medical Superintendent of the Gore Farm Hospital, had expressed upon the subject in the last report of the Statistical Committee of the Metropolitan Asylums Board. In my report I assigned a limit of 1000 feet to the aerial convection of small-pox because scarlet fever convalescents had been treated at this distance from the small-pox hospital for a period of six months with complete impunity, and I also stated that no outbreak had occurred to my knowledge amongst the inmates of the Darenth Asylum and Schools, whose grounds adjoin those of the small-pox hospital. The writer of the annotation takes exception to this view on the ground that the patients admitted to the fever hospital were limited to those who had been previously vaccinated. I may be allowed to explain that the vaccination referred to in my report was not of recent date, but, almost without exception, had been performed in infancy. The ages of the patients varied from three years upwards, and a considerable number of them, therefore, would not be efficiently protected, but liable on exposure to contract the disease. When, at the instance of the Small-pox Hospitals Committee, it was decided to limit the admission to the fever hospital to such vaccinated patients, it never occurred to my mind to dispense with other precautions against the conveyance of small-pox infection, and every possible precaution was taken except the revaccination of the fever patients, which we were not allowed to do. The patients, therefore, or at least some of them, were liable in my opinion to catch small-pox, though doubtless the disease would have been very much modified by the previous vaccination. The conditions applicable to the inmates of the fever hospital were not on all fours with those applying to a mixed population of vaccinated and unvaccinated persons, but as touching the question of aerial convection of small-pox I felt justified in concluding from its absence amongst these patients, many of whom in my opinion were vulnerable, and amongst the inmates of the adjoining asylum in perhaps a still greater degree, that the diffusion of small-pox did not extend to this distance.

The observation of the Royal Commission on Small-pox Hospitals, quoted by the writer, as to the "absence of danger in the accumulation of convalescent persons," appears to me to require further elucidation before it can be applied with fairness to the case of Gore Farm. It would not be accurate to infer from the term "convalescent" that the patients were not still in a highly infectious condition when they arrived at the hospital. Indeed, owing to the limited accommodation at the hospital ships, many patients were transferred to Gore Farm a few days after their arrival on board in order to make room for fresh cases, and almost all transferred cases would be suffering from infection in the opinion of the medical superintendent of the hospital ships, or otherwise they would have been discharged by him direct. What is it, then, which constitutes the difference between the infection of the acute and convalescent stages, and brings it to pass that "diffusion does not take place at all except when the cases of small-pox concerned are in the acute stage of the disease?" Those who hold this view are no doubt capable of explaining it, but none of the reasons which suggest themselves to my mind seem quite conclusive; and I beg respectfully to ask, What are the grounds upon which the writer of the annotation bases his opinion? I am, Sirs, your obedient servant,

C. E. MATTHEWS.

Fountain Hospital, Lower Tooting, July 11th, 1894.

"LARYNGEAL MOTOR ANOMALIES."

To the Editors of THE LANCET.

SIRS,—I trust you will allow me to say a few words in answer to Dr. Semon's letter in THE LANCET of June 23rd. It is perhaps discouraging to learn that Dr. Semon cannot endorse my views, but the reasons he gives for his inability to do so seem to me to be very bad ones. I begin to fear that I have written less clearly than I had hoped. I fear this the more after a prolonged and assiduous study of the sentence which stands second in Dr. Semon's letter. It reads like a charge of plagiarism, but that I know is not meant. I do not pretend to have shown the nature of the laryngeal cortical centres. It is one of the facts which Dr. Semon and I alike have to bear in mind in framing a hypothesis. That it fits in with his I would not affront him by doubting. I dissent from Dr. Semon's hypothesis, not because it is inadequate, but because it assumes too much and is improbable. I venture to state the points on which we are agreed and to indicate that from which we begin to differ.

It is agreed that there is in the abductor system, as compared with the adductor, a certain peculiarity—a delicacy or diminished resistance to injury—and that this belongs at once to the abductor muscle, to its nerve, and to the bulbar nucleus which presides over both. To account for this I

[1] THE LANCET, July 7th, 1894.
[2] THE LANCET, June 23rd, 1894

suggest that, as the nucleus presides over the nutrition of the nerve and muscle, the cause of this peculiarity may be looked for in the nucleus alone. I point out, further, that there are known to be two other peculiarities in the abductor system—namely, tonus and the absence of a cortical centre. Relying on what seem to me to be good analogies, I treat the last of these as the cause of all the rest, and in this way the peculiarities are made to explain and account for each other. Now Dr. Semon has long since committed himself to another view. He has never, so far as I know, supposed that the delicacy of the abductor system might be resident in its trophic centre, the bulbar nucleus, and he has never hinted that the disadvantage of the nucleus might be ascribed to the want of a cortical connexion. Should anyone attach to his third sentence the inevitable construction that Dr. Semon had considered and rejected or partly adopted the idea of such causation he would, I conceive, be greatly misled. Instead of the comparatively simple explanation that I offer, Dr. Semon supposes that there is an unknown difference of constitution between the adductor and the abductor muscles. He is not less bound to assume that there is another difference between their nerves and a third between their nuclei—to assume, moreover, that such differences have baffled the inquiry of histologists, and that in these particulars, too, the abductor system is a strange and unexampled anomaly. On the grounds of simplicity and probability, and notwithstanding Dr. Semon's great experience and acumen, I cannot hesitate to choose between the two alternatives, his and mine. I refrain from obtruding upon you an analysis of the experiments upon animals under ether. I fail to see that they have any bearing upon the point at issue. I demur, however, to the use of Bacon's term "crucial" as applied to these experiments. An expedient involving an element of uncertainty so great as that which Dr. Semon himself admits—namely, that as to whether there is or is not a peripheral ganglionic mechanism—to my mind invalidates its pretensions to so imposing a title. If to this be added our ignorance of ether effects generally and the numberless chances of error arising from local differences which cannot be taken into account, so far from calling the experiments crucial I am tempted to think that inferences based upon them alone partake largely of the fallacy known as *ignotum ex ignotiori*.

As regards the abductor function in quiet respiration, the work to which Dr. Semon refers me states the problem, Is it reflex or is it automatic? Dr. Semon says it is reflex. He does not prove it. His "manifold arguments" are condensed into half a page of generalisations concerning that wonderful *deus ex machinâ* the respiratory centre. He submits his conclusions to the test of an experiment—approximately crucial this time—and it fails. In this experiment the afferent path devised by Dr. Semon is removed, and in response to the exigencies of the central system during asphyxia the supposed reflex takes place all the same. I submit that this is not a proof of reflex as opposed to automatic action—rather the contrary, and, as before, I think it more logical to dispense with the hypothetical agency. Dr. Semon objects to the term "over-action" as equivalent to tonus, yet it is not a bad rendering in English of the Greek word. I do not defend it. I used it as descriptive only, and the comparison it implies refers to the lesser action of the adductors. I cannot admit that it is in this sense pathological. Dr. Semon says that he has not heard the tonus of the sphincters so spoken of; but, rather, has he heard the laryngeal abductors called sphincters?

I shall maintain the views expressed in my paper in THE LANCET of June 16th, 1894, until more forcible arguments are brought against them.

I am, Sirs, yours faithfully,

Wimpole-street, W., July 1st, 1894. JAMES CAGNEY.

"THE RESULTS OF THE HYDERABAD CHLOROFORM COMMISSION."

To the Editors of THE LANCET.

SIRS,—In the otherwise excellent report of my remarks on chloroform at the Royal Medical and Chirurgical Society in THE LANCET of July 7th my rejoinder to Dr. Gaskell has been omitted, and consequently the explanation I give of the discrepancy between his results and those of Surgeon-Lieutenant-Colonel Lawrie appears to have no foundation; but the facts before the society were that in Surgeon-Lieutenant-Colonel Lawrie's experiments clotting occurred, whereas it did not in those of Drs. Gaskell and Shore. The only explanation of this phenomenon is that the blood in Surgeon-Lieutenant-Colonel Lawrie's experiments had not been so altered as to lose its natural coagulability, whilst it had undergone this alteration in those of Drs. Gaskell and Shore. Although I may have been wrong in believing that Surgeon-Lieutenant-Colonel Lawrie used no peptone at all, yet this error did not affect my argument, since the quantity employed failed to produce the profound physiological changes which it did in the experiments of Drs. Gaskell and Shore.

I am, Sirs, yours truly,

Stratford-place, W., July 9th, 1894. T. LAUDER BRUNTON.

A REMARKABLE DECISION ON MEDICAL CHARGES BY A COUNTY COURT JUDGE.

To the Editors of THE LANCET.

SIRS,—I should be much obliged by your opinion on the following case, as bearing on the interests of medical practitioners generally:—Last summer I was engaged to attend a patient in her confinement, expected about the end of November, at the fee of a guinea. I was called to her at half-past eleven at night on Nov. 14th, when she was reported to be in labour. I found her suffering from gastric derangement and prescribed some medicine which relieved her. I again saw her on Nov. 16th, when she was better. I was again called after eleven at night on Dec. 18th, when I found her suffering from a similar attack and again sent her medicine which relieved her. I did not hear from her again until Dec. 30th, when at about eleven at night I delivered her with instruments, which were necessitated owing to the weak state of her heart. She progressed favourably for a few days, and then unfortunately developed peritonitis, from which she died on the ninth day. I sent in my account for 15*s.* for the extra visits and medicines previously to the confinement, and also charged a half-guinea extra for the instrumental delivery, and 3*s.* 6*d.* for a special visit after the patient's death, making altogether £2 10*s.* This account the husband disputed on the ground of over-charge. Consequently I was obliged to county court him. The case was tried at Bow recently, when, much to my surprise, the judge decided for the defendant on the plea that the guinea paid into court by the defendant covered all attendances from the engagement to the termination of accouchement.

I am, Sirs, yours truly,

FAIRPLAY.

*** We entirely dissent from the judge's decision in this case, and hold strongly that the guinea fee only applies to attendance on a normal labour. Would any superior court rule that such a fee should cover attendance in an intervening attack of small-pox or pneumonia?—ED. L.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Annual Report of the Medical Officer of Health.

THIS report is always an interesting document, and that for 1893 is no exception to the general rule. It will be remembered that Dr. Stopford Taylor recently retired from the office of medical officer of health, being succeeded by Dr. E. W. Hope, who had for some years held the office of assistant medical officer, and more recently also that of port sanitary medical officer. This report, therefore, is that of both these gentlemen.

The Population of Liverpool.

This is a somewhat unknown quantity. The census of 1891 showed a considerable decrease, which apparently continues, the number for 1893 being estimated as 510,514, as against 517,145 on July 1st, 1891, and 517,980 the previous April, when the census was taken. Against this apparent decrease is the remarkable fact that there is a natural increase of population by excess of births over deaths of 13,417 during the three years—viz., of 3921 in 1891, 5087 in 1892, and 4409 in 1893. If this natural increase be added to the estimated decrease of 6631, a total of 20,048 must

be accounted for by migration into the suburbs or elsewhere. The importance of this may be judged by the fact that the estimated population for the present year (1894) will show a further decrease to 507,230, on which basis the statistical returns will be prepared, to the apparent detriment of the sanitary reputation of the city. And yet, notwithstanding this decrease, Liverpool continues to be the most densely populated city of any in Great Britain; taking the whole area—5210 acres—within the municipal boundaries, the density is 97·9 persons per acre, and excluding the space occupied by the docks and quays the density is 114 per acre.

Deaths during 1893.

The total deaths were 13,919 during the year—1248 more than in 1892,—giving a rate of mortality of 27·3 per 1000 of the estimated population, and being 1·3 above the average rate of the last ten years (1883 to 1892), which was 26·0 per 1000. The deaths and death-rates of the respective quarters were:—

First quarter	3282,	or	25·7 per 1000.
Second ,, ...	3445,	,,	27·0 ,,
Third ,, ...	3621,	,,	28·4 ,,
Fourth ,, ...	3571,	,,	28·0 ,,

This increase is accounted for by an exceptional amount of sickness, which affected all classes, increasing the death-rate considerably, though not to the extent of former unhealthy years before the sanitary condition of the city was so much improved.

The Principal Zymotic Diseases.

Scarlet fever commenced in the autumn of 1892 and continued throughout the whole of 1893, causing 231 deaths—100 more than in the previous year. Diarrhœa was the most fatal of the zymotic diseases, causing 866 deaths, the largest number in any year since 1880, when the deaths were 1028. Only 9 deaths were caused by small-pox, 47 by diphtheria, 273 by measles, 32 from typhus fever, 96 from typhoid fever, 279 from whooping-cough, and 34 from cholera and cholera infantum.

Notification of Infectious Diseases.

The medical officer reports most favourably of the working of the Infectious Diseases' Notification Act and of its value as an indicator of the health of the community. He also testifies to the smoothness with which it is carried out by the cordial coöperation of the medical profession. The number of notifications received was 7086, the diseases being thus specified: scarlet fever, 3568; enteric fever, 1428; typhus fever, 147; continued fever, 153; fever, 64; puerperal fever, 82; small-pox, 90; cholera, 3; choleraic diarrhœa, 2; diphtheria, 251; membranous croup, 40; erysipelas, 1258.

Demolition of Insanitary Property.

Liverpool, like all densely populated cities, has much insanitary property. This is being dealt with very judiciously by the health committee, some of the worst "slums" having been changed out of all recognition. There is every reason to believe that this will be continued, care being taken to build up as well as to pull down.

July 10th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Society of Medical Officers of Health.

AT a meeting of the Northern Branch of the Society of Medical Officers of Health, held at Durham under the presidency of Mr. H. E. Armstrong, medical officer of health of Newcastle, an interesting paper entitled "Observations and Suggestions as to the Treatment and Burial of the Dead," was read by Mr. C. S. Hall, of Carlisle. A discussion was opened by Mr. Armstrong on the prevention of phthisis, and adjourned till the next meeting to be held at Tynemouth.

Alcohol in a Hospital.

At a meeting of a hospital board in Durham county, a member said that from March 1st to the 22nd there were four patients in the hospital. In that period there had been obtained nine bottles of port wine, three gallons and one bottle of whisky, two dozen bottles of stout, and a quarter cask of ale, at a total cost of £7 9*s.* 9*d.* The Chairman said it was monstrous that over 8*s.* worth of spirits per head per day should be consumed by the patients in the hospital, and he did not believe that they drank all this quantity. It was agreed that the local committee should call the attention of the caretaker to the matter.

A Park presented to Cockermouth.

There has been some agitation in Cockermouth as to providing a park for the town, and Mrs. Joseph Harris, of the Derwent Lodge, Cockermouth, has put the matter at rest by giving £2000 for the purchase of a park. She has placed the money in the hands of trustees.

South Shields.

South Shields is now in full swing as a popular health resort, and the death-rate of the borough warrants the position. The rate on the week ending June 30th was equal to an annual death-rate of 11·9 per 1000 per annum. There were no deaths from zymotic diseases. The birth-rate was 23·8.

Handsome Bequest to Leeds Charities.

The late Mr. John Scott of Hunslet-road, Leeds, has bequeathed the sum of £13,000 to be apportioned among certain Leeds charities. The Leeds General Infirmary, the Leeds Dispensary, and the Leeds Tradesmen's Benevolent Institution will, it is understood, each benefit to the extent of £1000. The whole of the remainder of the money above mentioned—namely, £10,000—is to be set apart for the building and endowment of almshouses for old people of both sexes, inhabitants of Hunslet, who have been reduced in circumstances through misfortune.

Sunderland.

Nearly 1000 cases of measles have been reported to the Sunderland health authorities during the last three weeks. Up to the present twelve deaths have occurred.

Sixty applications have been made for the post of medical officer of the Sunderland Lunatic Asylum, and six selections have been made from the list.

Newcastle-on-Tyne, July 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Leith and its Sanitary Officials.

As I mentioned last week, trouble had arisen in Leith between the medical officer of health and the sanitary inspector, and the matter was being investigated by a committee of the town council. The result of the investigation is that the inspector has been requested to send in his resignation. At the same time it has been suggested by the committee that it would facilitate the reorganisation of the sanitary department if the medical officer would also tender his resignation, as it would enable the council to consider and decide whether the time had arrived when Leith ought to have a medical officer of health who would not be engaged in general practice and who would devote his whole time to sanitary matters. It is to be hoped that the medical officer will see that it is for the public good that Leith shoud be free to make this most necessary and desirable change, and that the town council will begin to redeem its past by better action in the future. When changes are being made it may also be hoped that it will be arranged that there shall be no dual authority, and that the medical officer shall be the undoubted head of his department, the sanitary inspector being under his guidance and direction.

Edinburgh and Small-pox.

The epidemic is showing every sign of abatement, and the number of fresh cases reported has fallen very much. Considerable feeling has, however, been aroused at the action of the authorities, in the first place regarding the hospital in the Cowgate, and in the second in respect to the erection of a hospital in the Queen's Park. The Public Health Committee is having a good many unpleasant things said about it on these two matters, and it is difficult to escape from the idea that someone has blundered and that sufficient consideration has not been given to the fact that the Queen's Park is much visited by tourists, and that the radius of infection around a small-pox hospital may not have had that boundary given to it which would place the hospital beyond the limit of suspicion. The Lord Provost, being a medical man, comes in for fully more than his share of criticism, for if there be blame attaching to any one it must lie with the official adviser of the committee of the board of supervision.

Presentation to Dr. Alexander of Dundonald, Ayrshire.

Dr. Alexander, who has been sixty years in active practice and is widely known and respected throughout Ayrshire, was last week presented with a testimonial consisting of a service of silver plate and £250. The meeting at which the presentation took place was held in Kilmarnock, the Hon. G. R. Vernon presiding. Dr. Alexander is well worthy of all the honour done him. It must be a source of satisfaction to him and to his numerous friends that the community should thus indicate their sense of the value of his long and honourable career.

Home for Phthisical Patient for Scotland.

It is a singular fact that, though in Scotland we have our full share of tuberculous affections of the lungs, there is not in the entire length and breadth of the country a special hospital or "home" for the treatment of phthisis—a fact the more striking when it is considered that we have special hospitals for nearly everything else, and that the disease is so deadly and so common and, as a rule, so unfitted for successful treatment in the wards of a general hospital. The want of such a hospital has often been deplored and has repeatedly given rise to tolerably unanimous, though rather fruitless, correspondence in the local papers. Quite recently, however, the matter has been taken up by Mr. William Quarrier (the Scottish counterpart of Mr. Barnardo) as one of the numerous branches of his religious and philanthropic work. For the prosecution of this work Mr. Quarrier has already purchased the farm of Cassemeadow, adjoining his "orphan homes" at Bridge of Weir, near Glasgow, the ground being 86½ acres in extent and costing £6500. While most of this land will be set aside for agricultural purposes in connexion with the "orphan homes," ten acres, including a site sheltered from east and north and with a southern exposure, will be reserved for the "National Consumptive Homes of Scotland," as the new institution is to be named. Mr. Quarrier has already received from kindly disposed friends in the east of Scotland a sum of £7000 with which to build his first "home" for thirty patients. He starts with the belief that pulmonary phthisis is infectious, and therefore sensibly arranges that each patient shall have separate bed-room accommodation, with general sitting-, dining-, and recreation rooms, kitchen, bath-rooms, &c. He is sanguine enough to hope that by this provision, "together with special treatment," the great majority of the cases coming under his care will be cured, and no one, even with the fuller knowledge of the hospital physician or general practitioner, will hesitate to re-echo his hope and wish him "God speed." Mr. Quarrier's intention is to build six such houses, to hold about 200 patients in all and costing about £50,000, and towards this sum he has in hand and in promises £10 000. It should be explained, perhaps, that Mr. Quarrier is not a medical man afflicted with the ambition to "run" a specialty of his own; he is a well-known and entirely trusted layman who has given his life to philanthropic work. While it might have been better had such a scheme as this, appealing as it does to the sympathy of the entire public and so obviously intended to confer benefits on the general community and to give grateful relief to the already existing hospitals, been floated by a committee representing all classes of the population and all shades of religious belief, full credit must be accorded to Mr. Quarrier and those supporting him for their devotion in taking up such a course and entering a field from which the usual hospital organism has so far held aloof.

The New Professorship of Pathology at the Glasgow University.

The reproach which has so long rested on the Glasgow University School that there was no professorship of pathology in its medical faculty, and that the course in this most important subject was treated as an extra-mural course, has at length been removed by the creation of the new chair. The appointment of Dr. Joseph Coats to the new office, intimated in THE LANCET of June 30th, has been everywhere received in the Glasgow school with the warmest approbation; it was, indeed, in the circumstances, the only possible or fitting appointment. The office has been created and filled in accordance with Ordinance No. 20 (Glasgow, No. 5), the curators therein charged with this duty representing the University Court and the Western Infirmary. In terms of Section 4 of the Ordinance an arrangement has been made with the directors of the Western Infirmary, to the satisfaction of the University Court, for affording due facilities for the continued teaching of pathology. Dr. Coats' appointment is to date from and after Oct. 1st, 1894.

Aberdeen Royal Infirmary.

Dr. Mackenzie Davidson, ophthalmic surgeon to the Aberdeen Royal Infirmary, has sent in his resignation to the directors. This announcement came as a surprise to many. It is understood to be the result of the directors not being able to meet Dr. Mackenzie Davidson's views as to the appointment of a resident assistant. At present one resident is attached to the senior physician and the ophthalmic surgeon. It is said that the following gentlemen are candidates for the appointment: Dr. Ferdinands, Dr. Galloway, and Dr. Levack.

Students and Clinical Teaching.

On the recommendation of the medical staff the wards are in future to be closed to students for a fortnight before, and during, the examinations in clinical surgery and clinical medicine. The students consider this a hardship.

July 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENT)

The Belfast Hospital for Diseases of the Skin.

FROM the report presented at the annual meeting I learn that, during the past twelve months, 1118 patients were treated at the hospital, and of these 51 were admitted. The house during the past year has been put in thorough repair. From the treasurer's report I learn that the annual income from all sources was £369 12*s.* 5*d.* and expenditure £384 2*s.* 11*d.*, leaving a small balance against the hospital.

Queen's College, Belfast.

I understand that a strong representation having been made to the Government as to the want of more accommodation for the teaching of physiology and pathology in Queen's College, the Treasury, having regard to the good work which the College is doing and to the interest Belfast is now displaying in it, as evidenced by the foundation of the Dunville Chair and the movement for the establishment of the students' union, have promised that a new building will be erected and pressed forward as rapidly as possible. It will probably be ready in the session 1895-96.

The New Asylum for Belfast.

The Board of Governors of the Belfast City and District Asylum have arranged to purchase the house and grounds of Purdysburn for their new asylum. This place is about two miles from Belfast, and will in every respect be a most suitable position for the new institution.

Cookstown Water-supply.

On July 9th the Cookstown board of guardians gave formal permission to the inhabitants to use the new supply of water which has just been installed. The water is brought from Mintober where, four miles from the west of the town, there are springs. Here the water is arrested in a small basin, being then conveyed by a circuitous route, to avoid the hills, through a seven-inch pipe to the town.

July 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The St. John Ambulance Association.

The eleventh annual meeting of the Victorian centre of the St. John Ambulance Association was held recently in the Town Hall, Melbourne. The ceremony of presenting awards was performed by his Excellency the Governor, and illustrations of ambulance work were given. Dr. D. A. Gresswell, the chairman, stated in his report that the Victorian centre had instructed 7611 persons in the principles and practice of first aid to the injured, and that instruction had been given in various schools and colleges. In the railway department there were 645 certificated members, and among the police 184.

Action for Malpraxis.

Mr. H. L. Cummings of Annandale, N.S.W., was recently defendant in an action for alleged negligence and unskilfulness as a medical practitioner. It appeared that he attended

the plaintiff's wife in her confinement, and that she died three weeks afterwards from septicæmia. The action was only brought after Mr. Cummings had sued the plaintiff to recover his fees for attendance. The medical evidence called for the defendant showed that the patient had been properly and carefully treated by Mr. Cummings, who obtained a verdict and also subsequently gained his action to recover his fees.

Alleged Neglect at a Private Lunatic Asylum.

A debate took place on May 22nd in the Legislative Assembly of New South Wales concerning the manner in which patients are treated in a certain licensed house for the insane. It was alleged that a patient had been kept for four months in a room 12 ft. by 12 ft. without windows or ventilation—practically a stable, in fact—and unfurnished except for a straw mattress, and that he had been often left for twelve hours a day without attendance, food, water, or clothing, except his nightshirt. The Government stated that an inquiry was being held into the circumstances, and asked that members and the public should suspend judgment on the matter until a full report from the officials was received.

A New Medical Journal.

The first number of the *Intercolonial Quarterly Journal of Medicine and Surgery* has just been published. It is a handsome quarto of 104 pages, well printed on good paper, and illustrated with numerous phototypes. It contains original articles, clinical records, a periscope of current literature, and reviews of books. Dr. C. F. Coxwell contributes a long and unfinished paper on Dysphemia or Stuttering. He believes that in this affection the automatic speech centre is inherently weak, and, further, is hampered by impulses from an inhibitory centre. The control exercised by the centre over the muscles he regards as duplex—liberating and restraining. Inhibition of the latter element leads to spasm, inhibition of the liberating element causes transient paralysis, and in stammering there is a combination of spasm and paralysis. In a paper on Pylorectomy for Carcinoma Dr. MacCormick brings his cases of this operation up to date, and appeals to the physicians to recognise and transfer such cases to the surgeons before gland infection and adhesion have occurred. Dilatation of the stomach he regards as a contra-indication to operation. Mr. Finch Noyes records the results of Thyroid Feeding in ten cases of Skin Disease and concludes that, as far as psoriasis is concerned, although a beneficial result is obtained in some cases, it is not more rapid and not more permanent than could be obtained by other methods. Among the clinical records the most interesting is one of a case of Osteitis Deformans carefully investigated by Professor Watson. It will be seen that the new journal is a production that would be creditable to any country, but is in no way distinctively Australian.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the second examination of the Board in the subjects indicated at a meeting of the examiners on Thursday, July 5th :—

Anatomy and Physiology.—Edward Evans, Bernard Bradley Gough, John Dixon, and Frederick William Lee, of Guy's Hospital; James Huxtable Bendle, of St. Mary's Hospital; Walter Joseph Schuller and John Edwin Ford Palser, of London Hospital; William Joseph Fanning, of St. Thomas's Hospital; Arthur Heawood Prichard, of University College, London; Herbert John Walker, of King's College, London; Stratford Dobree Tollemache Halliday, of Middlesex Hospital; and David Leslie Beath, of St. Bartholomew's Hospital.

Anatomy only.—James John Haverson, of London Hospital; Louis Alexander Weatherhead French and Hadley Charles Jackson, of University College, London; David Price, Ernest Harold Scott, and Frederick Cairns Blakiston, of St. Thomas's Hospital; Harry Diamond Pelle, of Guy's Hospital; and Horatio White Abbott, of Charing-cross Hospital.

Physiology only.—William Leopold Burn, George Secretan Haynes, Montague Adye Cholmeley, and Gilbert Smith, of St. Bartholomew's Hospital; Albert Hamilton Burt, of King's College, London; Roderick Alexander MacLeod, of Westminster Hospital; and Herbert Charlton Jonas, of St. Thomas's Hospital.

Thirteen candidates were referred in both subjects, three in Anatomy only, and three in Physiology only.

Friday, July 6th :—

Anatomy and Physiology.—Hugh Bernard Onraet, Harold Simson, Arthur Reginald Adams, and Frederick Charles Hitchens, of Guy's Hospital; Francis Frederic Lobb and Ramsay Martyn Richards, of St. Mary's Hospital; Hamilton Maxwell Cruddas and Francis Edward Price, of St. Bartholomew's Hospital; Herbert James Phillips, of St. Thomas's Hospital; William Leslie Hay and Patrick Alpin James Maver, of King's College, London; William Forrester, of Bengal Medical College and Mr. Cooke's School of Anatomy and Physiology; Henry Watson Turner, of Middlesex Hospital; Walter Thomas Connell, of Queen's University, Kingston, Canada; and Herbert William Hardy and William Johnston, of Charing-cross Hospital.

Anatomy only.—Alexander Michael Ross, of King's College Hospital.

Physiology only.—Sydney George Butler and Edward William Clapham, of London Hospital; and Sidney Roach, of St. Bartholomew's Hospital.

Sixteen gentlemen were referred in both subjects, three in Anatomy only, and one in Physiology.

Monday, July 9th :—

Anatomy and Physiology.—Hugh Stanley Beadles and Robert Russell Thomas, of St. Bartholomew's Hospital; Augustus Kinsey-Morgan, Henry Rupert Marsh, Alfred John Hull, William Anderson Fuller, Daniel Bansall Todd, and Henry Fulton, of Guy's Hospital; George William Grey Jones and Richard Sidney Osborne, of St. Mary's Hospital; William Brenton and Walter Courtenay Rivers, of Charing-cross Hospital; Lewis Francis Leslie, of London Hospital; Alfred Parker Ambrose, of Westminster Hospital; William John Edwin Davies, of St. Thomas's Hospital; Anton Schnöller, of Zurich, Lausanne, and Berne Universities; and Arthur Norman McArthur, of King's College, London.

Passed in Anatomy only.—Bernard Holländer, of King's College, London; Reginald Henry Hyde, of University College, London; and William John Humby, of Middlesex Hospital.

Passed in Physiology only.—Pelham Christopher Maitland, of Middlesex Hospital; John Henry Pegg, of Cambridge University and St. Thomas's Hospital; and Arthur Orsborn Way, of St. Bartholomew's Hospital.

Eighteen gentlemen were referred in both subjects, four in Anatomy only, and one in Physiology only.

Tuesday, July 10th :—

Anatomy and Physiology.—James Sandison, student of London Hospital; Henry James Weston, Evan Jones, Frederick Harvey, and Harry Charles Bennett, of St. Bartholomew's Hospital; Montagu Smith of Middlesex Hospital; Arthur Hunton Carter of Guy's Hospital; Henry Edward Raper of University College, London; and Maurice Joseph Nolan of St. Thomas's Hospital.

Anatomy only.—Maurice Clare Bielefeld Anderson of St. Mary's Hospital; Thomas John Davies of Middlesex Hospital; Thomas Burnell Jones of St. Bartholomew's Hospital; John Ponsonby of Guy's Hospital; Henry Charles Meacock of St. Thomas's Hospital.

Physiology only.—Arthur Lionel Hall Smith and Richard Loy Wilcox, of University College, London; Bertram Eustace Laurence of St. Bartholomew's Hospital; Robert Sibbald Rowland and Thomas Joseph Vick, of Guy's Hospital; John Hugh Ripon Robinson of London Hospital; Ernest Urquhart Bartholomew of Charing-cross Hospital; Ernest Thomas Longhurst of St. Mary's Hospital; and George Lestock Thornton of Cambridge University, St. George's Hospital, and Mr. Cooke's School of Anatomy and Physiology.

Thirteen gentlemen were referred in both subjects, nine in Anatomy only, and five in Physiology only.

SOCIETY OF APOTHECARIES OF LONDON.—**Primary Examination, Part II.—The following candidates passed in the under-mentioned subjects :—**

Anatomy and Physiology.—O. C. Andrews, Birmingham; R. L. Angles, St. Mary's Hospital; A. Avant, St. George's Hospital; W. A. Crossley, St. Bartholomew's Hospital; D. Fletcher, St. Bartholomew's Hospital; T. H. Guillaume, Charing-cross Hospital; W. Latham, Manchester; W. Lloyd, London Hospital; P. C. Maitland, Middlesex Hospital; C. J. Palmer, Liverpool; J. Ponsonby, Guy's Hospital; W. G. Silvester, Birmingham; H. J. Watts, Manchester; A. B. Whishaw, St. Thomas's Hospital; W. J. H. Williams, St. Mary's Hospital.

Anatomy.—M. A. Alabone, Guy's Hospital; W. Allen, Birmingham; W. J. Bebb, Charing-cross Hospital; A. H. Bell, Guy's Hospital; F. M. Cooper, Woman's Medical College; R. F. Crawford, St. George's Hospital; A. Cubley, Sheffield; G. J. D. Davies, Leeds; F. R. Greenwood, St. Bartholomew's Hospital; A. Hay, St. Bartholomew's Hospital; F. T. Knott, Guy's Hospital; H. H. Monckton, King's College Hospital; P. A. Pierre, Westminster Hospital; G. H. Wilkinson, Birmingham.

Physiology.—A. N. Clemenger, St. George's Hospital; G. E. French, St. Bartholomew's Hospital; O. Hall, Durham; T. B. Jones, Guy's Hospital; G. H. Ormsby, Westminster Hospital; C. H. R. Provis, St. Bartholomew's Hospital; A. W. Shea, Sheffield; W. Taylor, Birmingham.

Chemistry, Materia Medica, and Pharmacy.—G. W. Dutton, Middlesex Hospital; F. Gartside, Manchester; H. L. Hands, Madras.

Chemistry and Materia Medica.—W. Taylor, Birmingham.

Chemistry.—T. H. Guillaume, Charing-cross Hospital.

Materia Medica and Pharmacy.—T. Christie, Liverpool; F. G. Haywood, Birmingham; A. D. B. von Rosen, City School.

ROYAL UNIVERSITY OF IRELAND.—**The following have passed the First Examination in Medicine :—**

J. F. Begley, N. J. Blaney, David Brown, J. W. Brown, F. C. Bullen, P. J. Burke, P. Canning, J. J. Carbery, W. V. Coppinger, Jerome Crowley, James Daly, Robert Graham, A. J. Hewitt, Geo. Jefferson, A. E. Knight, M. J. McDonough, Kennedy McGahey, A. B. McMaster, J. W. Megaw, Denis Murphy, Wm. Murphy, Edward O'Callaghan, W. Paisley, Owen Prager, F. S. Scott, A. M. Staunton, Robert Stern, Isabel Tate, James Walsh, Stephen Walshe, K. H. White, and Robert Whyte.

The following candidates will be allowed to present them-

selves for further examination for honours in the subjects mentioned after their respective names :—

John Begley, botany, zoology, chemistry, physics; N. J. Blaney, botany, zoology, chemistry, physics; David Brown, chemistry; W. J. Brown, zoology, chemistry, physics; Peter J. Burke, chemistry; Patk. Canning, botany, zoology, chemistry, physics; W. V. Coppinger, botany, physics; J. Daly, physics; Robt. Graham, botany, physics; A. J. Hewitt, physics; Geo. Jefferson, physics; M. J. McDonagh, chemistry; J. W. Megaw, zoology, chemistry, physics; Robt. Stein, chemistry; K. H. White, zoology; and Robert Whyte, physics.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND : CONJOINT SCHEME.—The following have passed the first Professional Examination :—

P. C. Brady, J. A. Byrne, George Carroll, E. P. Connolly, James Conway, T. O'C. Donelan, S. G. Elgee, M. W. Falkner, P. H. Falkner, D. Hadden, H. Hall, S. Jacob, C. A. A. Lever, W. H. May, W. O'Connor, T. A. E. Rooke, W. C. Ross, M. P. Ryan, C. F. Sheehan, H. W. Spaight, J. B. Treston, and R. J. White.

Allowed credit under five years' rules :

Anatomy.—W. Adye-Curran, J. M. Ahern, J. Clarke-Baylis, W. S. Bird, M. J. Dillon, D. A. Faris, C. H. Fitzgerald, James Gordon, A. W. Irwin, C. J. Jones, N. Kirby, L. H. Mayston, J. J. McInerney, W. Patterson, and A. Stephenson.

Chemistry and Physics.—J. M. Ahern, J. W. Clarke-Baylis, W. S. Bird, W. R. Blackwell, C. Crowe, James Gordon, and W. Patterson.

Biology.—W. J. Adye-Curran, J. M. Ahern, W. R. Blackwell, C. W. Crowe, James Gordon, D. Harrington, A. W. Irwin, C. J. Jones, and N. Kirby.

Pharmacy.—W. Adye-Curran, W. S. Bird, W. R. Blackwell, C. W. Crowe, T. B. Cusack, J. McF. Grose, D. Harrington, N. Kirby, F. J. Moore, J. J. McInerney, W. Patterson, W. Scott, A. Stephenson, and A. L. Tyndall.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—SCHOOLS OF SURGERY PRIZE LIST, SUMMER SESSION, 1894.—The Mayne Scholarship : Mr. Edward Joseph Moore. Gold and Silver Medals in Surgery : Mr. Asher Leventon, Mr. Edward Joseph Moore, equal—Gold Medals ; Mr. Patrick Francis Morrissey, Silver Medal ; Mr. Thomas Campion Lander, certificate. Practical Histology : Mr. Francis James Palmer, first prize and medal ; Miss Clara Louise Williams, second prize and certificate. Practical Chemistry : Mr. Percy Hope Falkner, first prize and medal ; Mr. Henry Hall, second prize and certificate. Forensic Medicine : Mr. George Robinson, first prize and medal ; Mr. Henry Edward Eardley, second prize and certificate. Materia Medica : Mr. Denis Kennedy, first prize and medal ; Mr. Francis James Palmer, second prize and certificate. Practical Pharmacy : Mr. David Haddon, first prize and medal ; Mr. Henry Hall, second prize and certificate.

CHURCH SANITARY ASSOCIATION.—Mention was made from many pulpits last Sunday of the aims of the Church Sanitary Association. In St. Paul's Cathedral Dr. Sinclair, Archdeacon of London, said that to the majority of the dwellers in country districts the advantages of satisfactory drainage, dry soil, wholesome food, fresh air, cleanliness, warm and purified clothing, the laws of illness, the principles of infection and contagion, the requisites of convalescence, and the importance of the first symptoms of disease were probably unknown. This want of knowledge had called into existence the Church Sanitary Association, which aimed at inducing the clergy in every parish to inculcate the laws of health. The Rev. R. Machell, Canon of York Minster, preaching at St. Martin's Church, York, said that while ministers of religion had a special work in preaching the higher life of the spirit, yet that preaching was incomplete if it was not brought into the range of practical everyday life, and did not supply high motives for doing common everyday work in the best way for both soul and body.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF PRESIDENT.

A QUARTERLY MEETING of the Council of the College was held on Thursday, July 12th, Mr. J. Whitaker Hulke, F.R.S., President, in the chair.

The President reported the result of the meeting of Fellows held on the preceding Thursday for the election of members of the Council.

Mr. J. W. Hulke was re-elected President of the College and Mr. Reginald Harrison and Mr. Alfred Willett were appointed Vice-Presidents.

Parliamentary Intelligence.

HOUSE OF LORDS.

FRIDAY, JULY 6TH.

Immigration of Aliens.

THE Marquis of Salisbury introduced a Bill, which was read a first time having for its object the placing in the hands of the Government more power with respect to aliens. The Bill consists of two parts, the first dealing with the treatment of destitute aliens proposing to land on our shores, and suggests that inspectors of the Board of Trade shall inspect immigrant passengers and prohibit the landing of any alien who is either an idiot, insane, a pauper, a person likely to become a public charge, or a person suffering from a dangerous or infectious disease. The second part of the Bill proposes to deal with the harbouring of anarchists. —Lord Rosebery said the Government would be prepared to meet the proposals of the noble Marquis in a friendly spirit.

MONDAY, JULY 9TH.

Malta Harbour.

Viscount Sidmouth directed attention to the alleged insanitary state of Malta Harbour, and wished to know whether any remedial measures were contemplated. He pointed out that many naval officers had recently succumbed to Malta fever.—The Marquis of Ripon said there was no reason to suppose that these deaths were caused by the insanitary state of the Harbour. The condition of things had considerably improved within the past few years, and the Government of Malta were taking active steps in the matter.

HOUSE OF COMMONS.

THURSDAY, JULY 5TH.

London Streets and Buildings Bill.

At the commencement of the proceedings Mr. Weir moved that it be an instruction to the Select Committee on the London Streets and Buildings Bill "that they do insert provisions for the purpose of making it compulsory that the surface water be carried away from under and around the site of every dwelling-house and other building." This, he said, was a serious matter, and demanded the immediate attention of Parliament. Lawyers might talk all round the question, but no practical man would dispute the fact that it was of vital importance to provide for the removal of surface water from the sites of dwelling-houses. At present thousands of families in London were at the mercy of unscrupulous builders and careless and indifferent surveyors.—Mr. A. C. Morton seconded the proposed instruction.—Mr. Stuart Wortley, chairman of the Select Committee, urged the House not to overload the Bill, which was already heavy enough, with this instruction.—Mr. James Stuart, speaking for the London County Council, said they had no objection to such a provision as this, but the effect of introducing it now would be that the Bill could not be passed during the present session.—Mr. George Howell expressed sympathy with the object of the instruction, but did not think this was the proper time to deal with the matter. On a division being taken, the motion was negatived by 95 votes to 15.

THURSDAY, JULY 12TH.

The Cattle Disease Question.

Mr. Herbert Gardner, replying to questions with reference to the Canadian cattle trade in this country, said he was sorry to say that he did not at present see any prospect of being able to dispense with the requirement that the cattle should be slaughtered at the port of arrival.

The Gresham University Commission.

Mr. Benn asked the Chancellor of the Exchequer whether, in view of the very recent publication of the evidence of the Gresham University Commission, he would adhere to the intention stated in March last to the effect that no legislation would be proposed on the subject this session.—The Chancellor of the Exchequer said he was afraid he was not in a position to give a definite answer to this question.

IN COMMITTEE.

The Food Products Adulteration Committee.

The Select Committee of the House of Commons on the adulteration of food products held another meeting on Friday, the 6th inst. Mr. Herbert Gardner, President of the Board of Agriculture, occupied the chair in the absence of Sir Walter Foster.

Mr. Herbert Preston Thomas of the Local Government Board again submitted himself to examination. Mr. Kearley questioned him at great length with reference to the analysis of milk, and other members of the Committee dealt with other points included within the scope of the inquiry. The samples of milk taken for analysis were usually procured, Mr. Thomas said, at the station of arrival, in order to meet the risk of milk being tampered with on the journey. The Local Government Board issued no regulations as to the manner in which the analysis should be carried out ; that was left entirely to the analyst himself. Certain appointments of public analysts had been vetoed by the board ; but he thought it would be invidious to mention names. The statements of qualification were very rigidly scrutinised ; they were invariably referred to the medical officer of the Local Government Board, and constantly it happened that this or the other qualification was inquired into. If the chemical knowledge of the person appointed seemed to be satisfactory then they might write, to inquire about his microscopical knowledge, and so forth. He was aware that the Society of Analysts had demanded that there should be a higher standard of qualification than at present, and he understood their views on the subject had been put before the Board. As to medical officers of health holding public analyst appointments, he doubted whether under the statute the Board would be justified in saying that because a man held the office of medical officer of health he ought not to be appointed a public analyst. There was no disqualification of this kind in the Act, although, of course, he did not

express any opinion as to the advisability or otherwise of the arrangement. He was aware also that the analysts had complained of the inadequacy of the salaries paid, especially where the medical officer of health did the double duty, but the Act enabling the Local Government Board to prescribe the qualifications did not say anything about the pay.

The Committee met again on Wednesday, July 11th, Sir Walter Foster presiding.

Dr. Richard Bannister of Somerset House, examined by the Chairman, said he had lectured and reported upon the subject this Committee were considering, and had been for thirty years in the Government laboratory. At the laboratory they received samples for analysis from all parts of the country. Last year they received from the Customs Department 2137 samples; Admiralty, 73; Board of Trade, 567; India Office, 707; Post Office, 143; Home Office, 43; War Department, 18; Trinity House, 86; Stationery Office, 4; Office of Works in London and Dublin, 33, Colonial Office, 2; references from magistrates under the Food and Drugs Act, 71; and parochial samples, 15. From the Inland Revenue they received 12,083 samples of tobacco, 9102 samples of beer for drawback, 8621 beer duty samples, 2820 samples of beer from public houses, 5775 samples of tinctures, 773 samples of naphtha and 5592 miscellaneous samples. From 1875 down to March 31st, 1891, 678 analyses of public analysts were submitted to them with the result that in 474 cases they agreed with the previous analysis, in 188 they disagreed, and in the remaining 16 cases the analyses were sent out for a special purpose. The disagreement in the case of milk analysis was rather a matter of interpretation of results than of actual mistakes. The public analysts were probably correct in their analysis, but differed from Somerset House in the conclusion at which they arrived. It was practically impossible from the sample to tell whether a milk was an adulterated milk or merely a poor one. The process of analysis used at Somerset House was that known as the Maceration Process. They took three quantities of milk weighing each about ten grammes, one quantity for ascertaining the total solids and the other two for determining the solids not fat. They found the different methods of analysis gave results differing to the extent of 3 per cent., and not only so but the different operators with the same method brought out different results. In his opinion a magistrate in arriving at a decision ought to consider the method of analysis which had been adopted. During the last two or three years they had been making experiments as to the solids in milk. They obtained samples of milk from different parts of the country and different times of the year, and along with them information as to the feeding of the cows. They took milk from 273 cows, and samples from 55 churns. They found that of non-fatty solids the lowest percentage was 7·52, the highest 10·04, and the average 8·90. Of fats the lowest percentage was 2·43, the highest 5·97, and the average 3·99. These figures applied to the milk from the cows. As to the milk from the churns, the lowest percentage of non-fatty solids was 8·40, the highest 9·70, and the average 8·96; while of fat solids the lowest was 2·89, the highest 5·61, and the average 4·00. The difficulty about fixing a standard and a limit arose in this way. Under the Food and Drugs Act of 1875 it was distinctly laid down that if they had a milk, or any other substance, from which nothing had been taken and to which nothing had been added, however poor it might be, it was genuine. In the case of milk, a large quantity had to be sold in towns quite away from the place of production, and Somerset House did not know its origin; therefore, when they got a sample of milk and no warranty, the analyst and Somerset House should fix a limit, so that if the sample fell below the limit it would be for the person to prove or give conclusive evidence to the satisfaction of the court that water had not been added. At Somerset House they began to be suspicious of water when the percentage of solids not fat got as low as 8·5. Another form of milk adulteration had come into vogue recently—and it was a very dangerous one—namely, the addition of separated milk to new milk. There was, of course, no difficulty here about the solids not fat, because these were increased, and if they found a sample of milk which contained perhaps from 9 to 9·2 per cent. of solids not fat, and from 2·7 to 2·8 per cent of fatty solids, it was pretty certain that separated milk had been added to the sample. As to the analysis of butter great difficulty was found in detecting adulteration because of the butter being kept for a time. The introduction of foreign fat had been carried on for a considerable time, and was difficult to detect because it was gone about in many different ways. A new form of adulteration in the last few years was the introducton of an excessive amount of water. In experience they found that the butters which contained an excess of water were Irish butters. The water was pressed into the butter in order to increase its weight. Good fresh butter contained from 12 to 14 per cent. of water, while in the case of salt butter the percentage was from 16 to 18, and sometimes went up as high as 24. Up to the present time they had no judicial decision as to the amount of water which might be present in butter without adulteration. The butters adulterated with margarine came chiefly from Holland. Since 1884 they had examined at Somerset House 17604 samples of beer, and of these they had found 3720 adulterated. The adulterants were either water or sugar singly, or together. They had found no noxious compounds in any of the samples.

By Mr. Herbert Gardner: He believed that in New York the standard of milk was 9·0 per cent. of non-fatty solids and 3·0 per cent. of fat.

By Sir Charles Cameron: At Somerset House they would not treat the presence of a little chloride of sodium differently fom the presence of boracic acid. He had seen no properly authenticated case of fat being added to milk, but they had had one case where a sample of milk contained about 1 per cent. of starch. Samples were sent to Somerset House for analysis at the discretion of the court. The defendant had no right to demand that the sample should be sent to Somerset House, and he regarded that as a weak part of the Act. He thought the defendant should have the option of a reference to Somerset House. He did not doubt for a moment that the limits recognised by Somerset House were well known by the public analysts throughout the country, although no special means were taken to publish them. The Somerset House limit for milk was as follows: 3·5 non-fatty solids, 2·75 fat, and 88·75 water. A good deal of difficulty had arisen in connexion with the analysis of coffee mixtures. It appeared to him that on account of difference of growth, chicory contained more extractive matter now than formerly. He was aware that it had been proposed to remove the Chemical Court of Appeal from the Inland Revenue to some other Government Department—the Board of Trade or the Local Government Board. He thought the first point to consider in such a matter was whether the Inland Revenue, as referees under the Act, had done their duty, and he thought if any one looked to their work, and the decisions of magistrates in connexion with it, they would concede that they had done their duty. He said, most emphatically, that there was not the slightest necessity for any change. At the present moment they did the work of the Board of Trade, and had done it for years. As to the Local Government Board, when any question arose upon which they had to report they did report.

By Mr. Channing: He thought that if they recognised such a term as "French coffee," it would only open another door for misrepresentation and imposition.

The Committee then adjourned.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, & COX, King William-street, Strand, London.

A Handbook of Diseases of the Nose and Pharynx. By J. B. Ball, M.D. Lond., M.R.C.P. Second Edition. Illustrated. 1894. pp. 364. Price 7*s.* 6*d.*

Aids to the Mathematics of Hygiene. By R. Bruce Ferguson, M.A., M.B. Cantab., L.R.C.P. Lond. 1894. pp. 89. Price 2*s.* 6*d.*

BLACKIE & SON, Old Bailey, London, E.C.

Elementary Treatise on Natural Philosophy. By J. D. Everett, M.A., D.C.L., F.R.S. Thirteenth Edition. 1894. pp. 324.

CAUSTON, SIR JOSEPH, & SONS, London.

"Mountain, Moor, and Loch," illustrated by Pen and Pencil, on the Route of the West Highland Railway. 1894.

CHAMBERS, W. & R., London and Edinburgh.

Organic Chemistry. Part I. By W. H. Perkin, jun., Ph.D., F.R.S., and F. Stanley Kipling, Ph.D., D.Sc. Lond. 1894. pp. 302. Price 3*s.* 6*d.*

CHURCHILL, J. & A., New Burlington-street, London.

The Pharmacopœia of the Hospital for Diseases of the Throat (Golden-square). Edited by F. G. Harvey, F.R.C.S. Edin. Fifth Edition. 1894. pp. 112. Price 2*s.* 6*d.*

LEWIS, H. K., Gower-street, London, W.C.

Inebriety or Narcomania: its Etiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M.D., F.L.S. Third Edition. 1894. pp. 780. Price 21*s.*

Post-Nasal Growths. By Chas. A. Parker. 1894. pp. 98. Price 4*s.* 6*d.*

Enteric Fever, its Prevalence and Modifications, Etiology, Pathology, and Treatment, as illustrated by Army Data at Home and Abroad. By F. H. Welch, F.R.C.S., Surgeon-Major A.M.D. pp. 190.

PENTLAND, YOUNG J., Edinburgh and London.

A Compend of General Pathology and Morbid Anatomy. By H. Newbery Hall, Ph.G., M.D. Illustrated. 1894. pp. 204.

Edinburgh Hospital Reports. Illustrated. Vol. II. 1894. pp. 676.

REBMAN, F. J., Adam-street, Strand, London.

Deaf-Mutism. By Holger Mygind, M.D., Copenhagen. 1894. pp. 300. Price 8*s.*

SAMPSON LOW, MARSTON, & Co., Fetter-lane, Fleet-street, London, E.C.

Madeira and the Canary Islands. A Practical and Complete Guide, with Maps and Plans. By A. Samler Brown. Third Edition. 1894. pp. 270. Price 2*s.* 6*d.*

THE NEW SYDENHAM SOCIETY, London.

Two Monographs on Malaria and the Parasites of Malarial Fevers I. Marchiafava and Bignami. II. Mannaberg. 1894.

VOGEL, F. C. W., Leipzig.

Lehrbuch der Physiologischen und Pathologischen Chemie. Von G. Bunge, Professor in Basel. 1894. pp. 447.

Beiträge zur Chirurgie der Ureteren, 7. Juni, 1894; von Dr. P. Modlinsky (E. Besold, Leipzig).—The Natural History of Plants, Part III.; by Kerner and Oliver (Blackie & Son, London, 1894); price 2*s.* 6*d.* net.—Die Reservekräfte des Organismus und ihre Bedentung im Kampfe mit der Krankheit; von Dr. W. Podwyssozki (E. Fischer, Jena, 1894).—Clinical Diagrams, with Directions for recording Cases of Heart Disease; by Geo. Herschell, M.D. Lond. (Baillière, Tindall, & Cox, London, 1894); price 1*s.*—Diagrams for recording Cases of Heart Disease; by G. Herschell, M.D. Lond. (Baillière, Tindall, & Cox, London, 1894); price 6*d.*—The Calendar of the Society of Apothecaries of London, 1894 (Gilbert & Rivington, St. John's House, Clerkenwell, London).—Guide for Medical Students, more especially for those about to commence their Medical Studies; by the Registrar of the Catholic University Schooi of Medicine, 1894-95 (Browne & Nolan, Dublin).—Cooling Regimen in Fever; by W. B. Hunter, M.D. (J. Heywood, Manchester and London, 1894); price 4*d.*—The Woman in White; by Wilkie Collins; a new edition (Chatto & Windus, Piccadilly, London, 1894); price 6*d.*—Observations and Suggestions as to the Treatment and Burial of the Dead; by C. S. Hall, L.S.Sc., M.R.C.S. (Halstead & Beatty, Carlisle, 1894).—Archives de Physiologie Normale et Pathologique, No. 3, Juillet, 1894 (G. Masson, Paris).—Ophthalmic Review, June, 1894 (J. and A. Churchill, London); price 1*s.*—Report on the Ventilation and Flushing of Sewers in relation to Health; by F. W. Clark, M.B., D.P.H. Camb., June, 1894 (W. Gwyn, Lowestoft).—The English Illustrated Magazine, July, 1894; price 6*d.*—Handbuch der Physiologischen Optik; von H. von Helmholtz; zweite umgearbeitete Auflage; achte Lieferung (Leopold Voss, Hamburg und Leipzig, 1894).—Teratologia: Quarterly Contributions to Ante-natal Pathology, with reviews of the current literature of the subject; edited by J. W. Ballantyne, M.D., F.R.C.P., F.R.S.E., July, 1894

(Williams & Norgate, London and Edinburgh); price 2s. 6d.—The Journal of Anatomy and Physiology, Normal and Pathological, Human and Comparative; Part iv., July, 1894 (Charles Griffin & Company, London); price 6s.—Archiv für Experimentelle Pathologie und Pharmakologie, Band xxxiii., Heft 6, 6. Juli, 1894 (F. C. W. Vogel, Leipzig).—Handbuch der Speciellen Therapie innerer Krankheiten; siebente und achte Lieferung (Gustav Fischer, Jena, 1894).—Clinical History of the Case of President James Abram Garfield; by Robert Reyburn, A.M., M.D. (reprinted from the Journal of the American Medical Association, March to May, 1894).—The Psychological Review, July, 1894 (Macmillan & Co., London).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ANDERSON, W. M., M.B., C.M. Aberd., has been appointed Assistant Medical Officer for the Chelsea Infirmary, vice Ward, resigned.

ANDERSON, W. S., M.D., M.S. Glasg., M.R.C.S., has been appointed Medical Officer for the Workhouse of the Chapel-en-le-Frith Union.

ASHTON, H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer and Public Vaccinator for the Sanitary District of Chadderton.

BISS, CECIL YATES, M.A., M.D. Cantab., F.R.C.P., has been appointed Physician to the Brompton Hospital for Consumption and Diseases of the Chest.

BROWNE, B. S., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Fifth Sanitary District of the Henstead Union, vice Robinson, resigned.

COLLES, A., M.D. Dub., F.R.C.S. Irel., has been reappointed Honorary Medical Officer to the Wellington Cottage Hospital.

CULROSS, J., M.B., C.M. Glasg., has been appointed Medical Officer for the Workhouse of the Newton Abbot Union, vice Haydon, resigned.

DAVIES, H. W., L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Honorary Surgeon to the Eye Infirmary, Newcastle.

EATON, JAMES, M.R.C.S., L.M., has been reappointed Medical Officer for the Spittlegate Sanitary District of the Grantham Union.

ELKINS, FRANK ASHBY, M.B., C.M. Edin., has been appointed Medical Superintendent of the Borough Asylum, Sunderland.

FERGUSON, J. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Long Preston Sanitary District of the Settle Union.

FLETCHER, WM., M.B., C.M. Edin., has been reappointed Honorary Medical Officer to the Wellington Cottage Hospital.

FOSTER, M. B., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed House Physician to the Leicester Infirmary.

FULLER, JOSEPH, F.R.C.S. Edin., M.R.C.P. Irel., L.M., has been appointed Medical Officer for the Workhouse of the Bedminster Union.

HARTLEY, R. U., M.B., B.S., M.R.C.S., has been appointed Honorary Surgeon to the General Infirmary, Leeds.

HILL, JOHN STONELY, M.B., C.M. Edin., has been appointed Honorary Surgeon to the Royal South London Dispensary.

HIND, W., M.D. Lond., B.S., F.R.C.S., M., has been appointed Medical Officer for the Workhouse of the Stoke-on-Trent Union.

JEAFFRESON, C. S., M.D. St. And., F.R.C.S. Edin., M.R.C.S., has been appointed Honorary Surgeon to the Eye Infirmary, Newcastle.

KELLY, F., M.B., C.M. Aberd., has been appointed Parochial Medical Officer for St. Nicholas, Aberdeen.

KOETTLITZ, REGINALD, L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer to the Jackson-Harmsworth North Polar Expedition.

LYNDON, A., M.D. Lond., M.R.C.S., has been reappointed Honorary Medical Officer to the Wellington Cottage Hospital.

MCLEAN, C. J. R., M.D., C.M. Edin., has been reappointed Medical Officer of Health for the Yeadon Urban Sanitary District.

MEREDITH, J., M.D., L.R.C.S. Edin., has been reappointed Honorary Medical Officer to the Wellington Cottage Hospital.

PLUMMER, SELBY W., M.D. Durb., B.S., has been appointed Physician to the Durham County Hospital.

SIMPSON, W. B., M.B., C.M. Aberd., D.P.H., has been appointed Assistant Medical Officer, Grimsby.

SMITH, S. KELLETT, F.R.C.S., has been appointed Honorary Assistant Surgeon to the Liverpool Stanley Hospital.

TOMLIN, R. F., M.R.C.S., has been appointed Medical Officer for the Fishmongers' and Poulterers' Institution, Wood Green.

VAUGHAN-WILLIAMS, H. W., M.B., C.M. Edin., has been appointed Medical Officer for the Gosforth Sanitary District of the Whitehaven Union.

WHITE, J. W., L.R.C.P. Irel., L.M., L.F.P.S. Glasg., M.R.C.S., has been appointed Medical Officer for the No. 2 Sanitary District of the Bedminster Union.

WOOD, W. H., M.R.C.S., has been appointed Medical Officer of Health for the Rural Sanitary District of the Kingsbridge Union.

YOUNG, R., M.D. Durh., M.R.C.S., has been appointed Medical Officer to the Workhouse, the Oldham Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Ophthalmic Surgeon.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £70 per annum, with board and residence.

CAMBRIDGESHIRE, &c., LUNATIC ASYLUM, at Fulbourn, near Cambridge.—Assistant Medical Officer (unmarried). Salary £140 per annum, with board, lodgings, and attendance in the Asylum.

CHARING-CROSS HOSPITAL, Strand, London, W.C.—Assistant Surgeon.

CHICHESTER INFIRMARY.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITAL, Netherfield-road.—Resident Medical Officer at the City Hospital North, Netherfield-road. Salary £100 per annum, increasing £10 per annum to £120, as a maximum (subject to certain conditions), together with board, washing, and lodging at the Hospital. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Resident Medical Officer. Salary, £80 per annum, with board and residence.

FISHERTON ASYLUM.—Assistant Medical Officer, single. Salary £100 per annum, with board, lodging, and washing. Apply to Dr. Finch, Salisbury.

GENERAL HOSPITAL, Birmingham.—Surgical Casualty Officer (non-resident) for one year.

GENERAL HOSPITAL, BIRMINGHAM.—Honorary Surgeon.

GENERAL HOSPITAL, Birmingham.—House Physician for one year. Salary £70 per annum, with residence, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Two Assistant Physicians.

HOXTON HOUSE ASYLUM, Hoxton-street, London, N.—Clinical Assistant. Board, lodging, and washing provided, and an honorarium at the rate of £40 a year.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer (unmarried) for twelve months. Salary £150 per annum, with board and residence.

POPLAR HOSPITAL FOR ACCIDENTS, Blackwall.—Qualified Dispenser. Salary £1 a week.

POPLAR AND STEPNEY SICK ASYLUM, Bromley, E.—Locum Tenens for nine or ten weeks from Aug. 1st, at £3 3s. per week, with usual resident allowances.

ROCHDALE INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary £80 per annum, with board and residence.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—Honorary Surgeon.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields.—Senior House Surgeon. Salary £75 per annum, with board and residence.

RUBERY HILL ASYLUM, Bromsgrove.—Clinical Assistant. Applications to Medical Superintendent, Suffern, Rubery Hill.

SEAMEN'S HOSPITAL SOCIETY, "Dreadnought," Greenwich.—Junior House Surgeon for branch hospital, Royal Victoria and Albert Docks, E. Salary £50 per annum, with board and residence.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

SURREY DISPENSARY, Southwark, S.E.—Surgeon. Honorarium 50 guineas per annum. Applications to 53, Borough High-street, Southwark.

Births, Marriages, and Deaths.

BIRTHS.

EDRIDGE-GREEN.—On July 9th, at Ravensfield-villas, Hendon, N.W., the wife of F. W. Edridge-Green, M.D., F.R.C.S., of a son.

HELSHAM.—On July 7th, at Beccles, the wife of Hugh Paul Helsham, of a son.

MINTER.—On July 3rd, at Mansion-row, Chatham, the wife of Ernest D. Minter, Surgeon R.N., of a son.

PARR.—On July 4th, at 279, Glossop-road, Sheffield, the wife of John F. Parr, Surgeon, &c., of a son.

ROBINSON.—On July 10th, at Peckham-rye-common, East Dulwich, the wife of Waring Robinson, L.R.C.P., M.R.C.S., L.S.A., of a son.

STARLING.—On July 5th, at Clifton-hill, N.W., the wife of Ernest H. Starling, M.D., of a daughter.

MARRIAGES.

DOVE—CLARKE.—On July 5th, at St. John's, High Fell, Gateshead-on-Tyne, R. Atkinson Dove, M.B., C.M., L.R.C.S., youngest son of George Dove, J.P., Viewfield, Stanwix, Carlisle, to Lila, third daughter of the late William Clarke, J.P., The Hermitage, Gateshead-on-Tyne.

FORWARD—MACDONALD.—At the Cathedral, St. John's, Antigua, by the Right Rev. the Lord Bishop of Antigua, assisted by the Rev. E. Branch and the Rev. H. Y. Shepherd, Francis Edward Forward, F.R.C.S., Medical Officer to the Holberton Institution, Antigua, to Millie, second daughter of John MacDonald, Esq., of Gray's Hill.

GODFREY—D'AMBLÉON.—On July 10th, at St. Peter's, Eaton-square, T. H. Godfrey, M.B., of Stockton-on-Tees, to Marguerite Norah M. Didier d'Ambléon, eldest daughter of the late Viscount Henri C. Didier d'Ambléon.

WILLS—POWELL.—On July 6th, at St. Nicholas, Guildford, by the Rev. George R. C. Chilton, M.A., Vicar of Wanborough, William Alfred Wills, M.D., M.R.C.P., of 23, Lower Seymour-street, London, son of the Hon. Mr. Justice Wills, to Rosamond Emma, daughter of Thomas Wilde Powell, Esq., of Piccard's Rough, Guildford.

DEATHS.

EDWARDES.—On June 15th, at Alexandria, Henry Stapleton Edwardes, M.D., late Assistant Surgeon, Royal Navy, aged 68.

LITTLE.—On July 7th, at Ryarsh, near West Malling, Kent, William John Little, M.D., F.R.C.P., late of Park-street, W., aged 84.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 12th, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
July 6	30·00	S.E.	72	64	128	87	61	...	Hazy
,, 7	29·99	N.W.	65	59	127	73	59	0·14	Cloudy
,, 8	30·05	W.	67	58	123	74	52	0·05	Cloudy
,, 9	29·81	S.W.	62	59	114	74	55	0·14	Overcast
,, 10	29·62	S.W.	62	58	92	66	58	0·03	Overcast
,, 11	29·34	W.	60	57	117	72	56	1·33	Cloudy
,, 12	29·28	S.W.	61	57	109	65	55	0·20	Cloudy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

"FURENS QUID FEMINA POSSIT."

THE following letter, says the *Pall Mall Gazette*, was received by one of the examiners at a recent examination for a medical diploma, and was written by a feminine student of medicine. Our contemporary suppresses the names and addresses; but these, we think, would be as interesting as the letter itself:—

"SIR,—Don't you dare refuse me again in physiology when you *know* I know *all about* physiology; I very likely know more than you do. I shall write to Mr. —— if you do about it. Very soon Doctors will be drawn only from we *pure noble-minded women*, and you *vile drunken filthy* men expelled for ever.

(Signed) "—— ——."

Mr. James Usher.—We regret that we cannot possibly answer the sort of question our correspondent asks us. It should be asked of the private medical attendant on this side of the water.

A Victim who Lives in the West End has omitted to enclose his address.

THE SODEN FUND.

To the Editors of THE LANCET.

SIRS,—The subscribers to the above fund may be interested to hear that the total subscriptions amount to £119 16s. This sum, less working expenses, has been handed to Mr. Soden. My committee further desire me to express to you their thanks for the kind manner in which you have assisted them in raising this amount.

I am, Sirs, yours faithfully,

W. F. BROOK, Hon. Sec.

Northampton-terrace, Swansea, July 10th, 1894.

NOTIFICATION QUESTIONS.

LUZ.—The statement is interesting and careful. The questions put are of some difficulty; but they are important, and we shall do our best to give what we deem to be the proper answers categorically, with some after-remarks. 1. "Did I do right in taking an apparently non-infectious, yet doubtful, case to the cottage hospital?" We think our correspondent was right in this course.—2. "Did I do right in refusing to remove the patient?" Our correspondent was within his rights here, if he thought removal dangerous to the patient. But it was open to discussion whether at this comparatively early stage of the disease careful removal would have been so risky as to weigh against the arguments in its favour.—3. "Was the resolution passed by the hospital committee fair to me as a medical practitioner?" There was nothing, we think, essentially discourteous or unfair in the sanitary authority—considering the doubtful, and yet serious, nature of the case—requesting the consultation with the medical officer of health. There is no necessary disparagement to a medical officer of a cottage hospital or any other practitioner in the sanitary authority suggesting a consultation, provided it is not done in frivolous circumstances and that it is duly paid for. While it is the right of the medical attendant to take what time is reasonable to make his diagnosis, he does well to allow for the anxiety and responsibility of the sanitary authority, and certainly a week did seem rather long delay in notification after being "practically" decided in diagnosis.—4. See answer to Question 3. We think the local medical officer of health erred in seeing the case without the consent of the practitioner in attendance.—5. No one is compelled to notify any disease "offhand"; but when there is "practically" no doubt much time should not elapse in communicating with the sanitary authority, even if with a slight reserve of full notification. The only way to avoid friction in these difficult circumstances is for the authority to consider the medical man and for the medical man to consider the authority. Our correspondent seems to have taken every pains to protect his patient and those about him. We confess to thinking that enteric fever would have been better lodged in the Port Sanitary Infectious Hospital (supposing it to have been duly disinfected since its previous occupation by a small-pox patient months before) than in the Cottage Hospital. We always defend the absolute responsibility of the medical man; and we do so here, thinking it should be accepted as not only *bonâ fide*, but as intelligent and protective to all concerned. The only qualification to our praise of it would be to say that the sanitary authority was excusable in its anxiety about the case, and that this was perhaps scarcely sufficiently recognised by our correspondent.

Messrs. T. & H. Smith and Co. of 21, Duke-street, Edinburgh, have called our attention to the fact that in reporting upon their sample of coffee extract in our Special Analytical Sanitary Commission last week we have wrongly designated their firm as "F. H. Smith."

M.R.C.S. Eng.—Our correspondent's attention is directed to a leading article in our present issue on the subject of unqualified assistants.

Mr. R. Doyle is recommended to consult his medical man. We do not give advice.

Mr. W. J. Manks.—We do not recommend practitioners.

DESICCATED MILK.

To the Editors of THE LANCET.

SIRS,—I should be glad of any information about desiccated milk—where it may be procured, and its usefulness or non-usefulness as a substitute for fresh milk, taken in large quantities as a diet.

I am, Sirs, your obedient servant,

Honiton, June 30th, 1894. JOHN CRAIGIE, M.D.

*** Desiccated milk cannot be regarded as a satisfactory substitute for fresh milk, since changes of a probably important kind from the dietetic standpoint occur during the evaporation. Thus the fat enclosed in the cream envelopes is set free, the phosphates separate in gritty form, and it is doubtful whether they dissolve again in water. Separated phosphates commonly form the gritty deposit found in condensed milk. Malted milk powders are, however, very useful foods.—ED. L.

Indignant, (A.M.D.).—We really think the remarks in the debate on the army medical vote, to which our correspondent directs notice, are not worthy of any attention. To take serious notice of silly and irrelevant observations is only to give them an importance which they do not merit. Left to themselves they promptly die of inanition

Inquirer should apply to the firm for particulars of the composition of the substance, when he will be able to judge for himself if the dose mentioned is likely to be harmful.

Mr. T. Laffan. We must know exactly and for certain what was said before we can comment upon the words.

Mr. W. Lucas.—No; provided each is free from any hereditary tendencies to disease.

THE MISUSE OF THE WORD "MEDICAL."

IT is, we suppose, too much to expect the ordinary reporter to draw a distinction between the medical profession and an unprincipled and unqualified person undergoing penal servitude for performing an illegal operation on a woman. Such was the case of Arthur E. Sharp Evans, who lately died at Wormwood Scrubbs Prison, and on whose body an inquest was held. We would point out to all reporters who wish to do their work carefully that a great injustice is done to the medical profession by identifying such persons, who are not subject to its authority, and are not guided by its principles, with a profession of which they are not members.

Cyclops.—It is usual for the coroner to order the medical man called to see the deceased to make the post-mortem examination and to give evidence at the inquest. In the case referred to, however, the circumstances were somewhat special, for the deceased person had been attended by a practitioner the day before the death. Under these circumstances we cannot say that the coroner acted arbitrarily and harshly in requesting the services of the practitioner in question, seeing that the latter would have his diagnosis to guide him as well as his post-mortem observations. Nevertheless, we sympathise with our correspondent, as he had reasonable grounds for expecting to give evidence. In cases similar to the one under consideration we have known coroners to exercise their discretionary power by dividing the duty and distributing the statutory fee (£2 2*s.*) between two medical men; but this, of course, could only be done with their consent. A coroner has no power to engage and pay two independent medical witnesses without the expressed or implied permission of the County Council. In cases of exceptional difficulty it is the custom either to obtain permission to employ expert assistance prior to the inquest or, if the circumstances do not admit of delay, to get the jury to sign a memorandum that in their opinion such expert assistance was necessary.

A Forty Years Subscriber.—We recommend our correspondent to apply for information to the Secretary, Royal British Nurses' Association, Old Cavendish-street, W.

F. J. G.—Our correspondent will find all the information he requires in the Students' Number of THE LANCET.

Mr. E. Townsend.—We do not recommend practitioners.

THE GRIFFITHS FUND.

To the Editors of THE LANCET.

SIRS,—Will you kindly acknowledge the following additional subscriptions to the above fund? Amount already acknowledged, £183 12*s.*; V. Ll. Jones (St. Clears), £1 1*s.*; Howell Rees (Glan Garnant), £1 1*s.*; J. F. Stamper (Pembroke Dock), £1 1*s.*; W. Davies (Llandilo), £1; part fees returned by Eben. Davies, H. Charles, and W. F. Brook, who were subpœnaed as witnesses at the trial, £49 6*s.* 6*d.*

We are Sirs, yours faithfully,

E. LE CRONIER LANCASTER,
Winchester House, Swansea,
W. F. BROOK,
Northampton-terrace, Swansea,
} Hon. Secretaries.

July 9th, 1894.

FINE FOR FALSE CERTIFICATE OF DEATH AT BRIERLEY HILL.

AT the police-court, Brierley Hill, on July 2nd, a medical practitioner was fined £5 for a false certificate of death in a case of measles which had been attended by an unqualified assistant. The defence was that the practitioner had been ill, and had seen several cases of measles in his bedroom, believing this to be one of them, which proved not to be the case. The magistrates considered the charge proved, but in consideration of it being the first offence did not impose the fullest fine.

Pauper.—We do not see the irregularity. We are not aware of any law against C.'s retaining the vaccination appointment, and it would have been an act of great hardship to deprive him of it. Is it to be maintained that a registered member of the Royal College of Surgeons of England is not capable of vaccinating or filling a vaccination appointment? The guardians, be it remembered, made a convenience of this gentleman with his one qualification. That he has only one is to be regretted, but that was enough in 1872 to entitle him to a place in the Register, and he is entitled to be treated by the guardians, and also by those who possess more than one diploma, with consideration.

C. E.—The order of the court seems to us halting and unsatisfactory. The question of law is clear. A partially qualified assistant is for legal purposes an unqualified assistant. The question of charge is not one of law at all, but of circumstances and personal feeling.

Messrs. S. Maw, Son, and Thompson ask us to state that the ophthalmic ice-bag described in our last issue by Dr. Macnaughton-Jones exactly resembles one made by their firm for the late Surgeon-Major Wyatt, Coldstream Guards, twenty years ago.

An Ealing G.P. has not enclosed his address.

A TAX ON BRAINS AND HEALTH.

IT is gratifying to notice that on several occasions during the discussion on the Budget proposals influential speakers have directed attention to the injustice of applying the same rate of taxation to income derived from hard work and dependent on the life and health of the payer as is applied to income derived from investments. True, no statesman has yet had the courage or the energy to devise means for remedying this injustice; but it is now so clearly perceived and expressed that its redress cannot be much longer delayed.

Dr. Walter Groome sends us two letters. One is a protest from himself to the secretary of the New Cross Wesleyan Slate Club, in which he very rightly sets out the false position in which he has been placed by the unwarrantable use of his name upon the handbills of the club. The other is a very handsome apology from the secretary of the club for the error into which he had been betrayed by his ignorance of medical etiquette. We congratulate Dr. Groome on his prompt repudiation, and no less the secretary on the terms of his retraction.

Dr. George Davidson.—1. It is illegal to continue to use titles attaching to qualifications which have been withdrawn by the medical authorities which gave them, and it is not much otherwise to use titles which are no longer registered or registrable. The same applies to the word "Surgeon" on the doorplate. It implies registration.—2. A practitioner removed from the Register for "covering" would be regarded by the General Medical Council as an unqualified practitioner, and therefore unfit to take charge of a branch practice a mile away.

Mr. F. H. Hodges.—Yes; Aix-la-Chapelle. There is, as a rule, no difficulty in obtaining accommodation.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES AND ADDRESSES.

MONDAY.—ST. JOHN'S HOSPITAL FOR SKIN DISEASES (Leicester-sq., W.C.).—6 P.M. Dr. Morgan Dockrell: The Lichens.

WEDNESDAY.—METROPOLITAN HOSPITAL (Kingsland-road, N.E.).—Mr. Waring: Diseases of the Tongue. (Post-graduate Lecture.)

During the week marked copies of the following newspapers have been received:—*Oban Times, Yarmouth Independent, Cromer Post, Wiltshire County Mirror, Manchester Guardian, Bradford Daily Argus, Bath Herald, Dundee Courier, Toronto Daily Mail, Wakefield Express, Montgomeryshire Express, Norfolk Daily Standard, Gorton Reporter, Workington News, Pontefract Express, Stalybridge Reporter, Shrewsbury Chronicle, Morning, Redcar News, Scotsman, Hampshire Telegraph, Portsmouth Evening Mail, South Wales Times, Cumberland Advertiser, Indian Daily News, Bolton Journal, Widnes Weekly News, The News, Yorkshire Post, Pioneer Mail, Oswestry Advertiser, Cape Times, Liverpool Daily Post, Times of India, Guy's Hospital Gazette, Macclesfield Courier, Lincolnshire Echo, Kilmarnock Standard, Montgomeryshire Echo, Sunderland Herald, Scottish Highlander, Straits Budget (Singapore), Loughton Advertiser, Cheltenham Mercury, Hastings News, Scarborough Post, Lincoln Gazette, Edinburgh Evening Dispatch, Herne Bay Argus, Limerick Chronicle, Dundee Advertiser, St. Austell News, Globe, Isle of Wight Mercury, Cannock Chase Courier, Smethwick Telegraph, &c. &c.*

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E.—Eighth International Congress of Hygiene and Demography, Budapest, Hon. Secretaries of; Epsom College, Headmaster of; Express Dairy Co., Limited, London, Manager of.

F.—Sir Walter B. Foster, London; Dr. Charles Forbes, London; Mr. W. C. Finch, Salisbury.

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